

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

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Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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"FLIGHT" PHOTOGRAPHS.

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1927

- June 30 Aviation Ball at May Fair Hotel
- July 1 R.A.F. Dinner Club, Annual Dinner at Connaught Rooms
- July 2 Royal Air Force Display, Hendon.
- July 9 Scarborough Air Pageant, under auspices of Yorkshire Aeroplane Club.
- July 15 Entries Close for King's Cup Air Race.
- July 16 Birmingham Air Pageant, and Air League Challenge Cup, Castle Bromwich.
- July 30 King's Cup Air Race.
- Aug. 10-12 Navy v. R.A.F. Cricket Match.
- Aug. 20—
- Sept. 2 International Aero Exhibition, Copenhagen.
- Sept. 10 Gordon-Bennett Balloon Race, Denver, U.S.A.
- Sept. 25 Schneider Trophy Race at Venice.
- Oct. 20 Aero Golfing Soc. (Cellon Cup), Walton Heath.

EDITORIAL COMMENT.



The R.A.F. Display

THE outstanding British aviation event of the year will be "staged" on Saturday next. Not only will a greater number of machines take part in the Royal Air Force Display at Hendon than at any other British flying event, but the various "items" are, almost without exception, of a character not found at any ordinary flying meeting. The evolutions in formation of a large number of machines always creates a very impressive effect, and this year's Display will have, in addition to many events of a nature previously seen, several new features. Among these, doubtless that of air manoeuvres to music will be greatly appreciated, this being the first occasion on which anything of the kind has been attempted. Certain airs will be played by the R.A.F. band on the ground. These airs will be transmitted by wireless telephony to the pilots of the nine "Siskins," who will, in harmony, carry out the appropriate manoeuvres.

Another event which is certain to be of great interest, it being the first occasion on which light aeroplanes have been used in numbers in the Display, will be the exhibition of "aerobatics" on five de Havilland "Moths," with Armstrong-Siddeley "Genet" engines. In spite of the fact that their engines are of some 75 h.p. only, the "Moths" are believed to have proved themselves admirably suited for stunt flying, and at the Display the five instructors from the Central Flying School are expected to demonstrate an entirely new manoeuvre. This is one which requires very determined handling of the machines if excessive diving speeds are to be avoided, and we would advise our readers to watch very carefully when event No. 6 commences at 4.35 p.m.

An event requiring the very highest degree, not only of skill, but also of judgment of time and speed, is that known as "Converging bombing on a moving target." In this, the machines come in from all sides, dive low towards the target, drop their bombs

on it and fly away. With the flights paths converging at one point, the machines coming from all directions, it will be realised that nothing but perfect judgment and skill can avoid collisions. As a spectacle this event is very "emotioning." In actual warfare, its value is that it is well nigh impossible to defend oneself against this form of attack.

Every other item in the programme will be found to present something of interest, but we do not propose to publish too many details, as every visitor to the Display should make a point of obtaining a copy of the *official programme*. Remember that the proceeds of the Display, and consequently of the sale of programmes, will be devoted to various Royal Air Force charities. This point has been kept in mind by us throughout in the compilation of the special Display section of this week's issue of *FLIGHT*, and although we have attempted to do our best to make that section of interest and assistance to our readers, we have deliberately refrained from including anything which might possibly tend to reduce the sale of official programmes. Our tinted pages are not claimed to be, nor indeed do they attempt to supplant, the official programme. Rather do we hope that they will be found to supplement the official publication, in which naturally the information given must be somewhat limited. This applies especially to illustrations, and we trust that the photographs of aircraft types which we give this week will be useful, in thus supplementing the official "book of the words."

Of very particular interest at the R.A.F. Displays is always the Fly-past, or "Parade," as it is officially termed this year. In this event machines of more or less novel type take part, and this year the number of types that may legitimately be described as "new" is rather larger than we have been accustomed to in previous years.

This applies more particularly to the new "General Purpose" types, which are a result of a competition held recently. It should be realised that several types were produced for this competition which will not take part, but the four machines which are in the "Parade" may be regarded as fairly representative of the type in general.

Apart from the "General Purpose" machines, special interest will probably attach to two types, the Boulton and Paul "Sideshow" and the Bristol "Bulldog," both of which will make their first public appearance at the Display, and both of which are representative of a serious attempt to tackle what is, probably, nowadays the most serious phase of aircraft design—namely, the phenomenon known as "interference." As the name implies, this means the effect which the presence of one part of an aeroplane has upon another part. Thus, it has hitherto been customary, in order to obtain performance estimates, to measure the resistance, or drag, of individual parts such as wings, fuselage, undercarriage and tail, and hope that the resultant resistance would be equal to the sum of the resistances of the separate items. Sometimes this has, fortunately, been found to be the case fairly accurately; at other times great differences have been found. No general law has yet been formulated, and one of the greatest difficulties of modern design is to reduce this interference. In the "Sideshow" the streamline fuselage, and more particularly the design of the engine mountings on the wings, have been responsible for a great reduction in "interference," with consequent gain in performance, while in the "Bulldog" it is, perhaps, mainly the carefully planned streamlining of the engine, which has resulted in a considerable gain in performance. Both machines are well worth watching very closely.



THE ROYAL VISIT TO AUSTRALIA : Our photograph shows Group-Captain H.R.H. the Duke of York inspecting Supermarine-Napier "Seagulls" at Point Cook

AIR TRANSPORT IN MALAYA

For some months past negotiations have been in progress for the establishment of one more link in the chain of Imperial air routes.

The recent visit by air of Mr. R. C. Kemp, Managing Director of the Air Survey Co., Ltd., to Singapore was made for the purpose of submitting definite proposals for an air service in Malaya.

Associated with Mr. Kemp in the management of the Air Survey Company are Col. C. H. D. Ryder, C.B., C.I.E., D.S.O., late Surveyor-General of India, and Mr. F. P. Raynham. During the past three and a-half years this company has had unique opportunities of studying flying conditions in the East. It has been continually engaged on important surveying contracts, and in connection with this work has become thoroughly acquainted with the whole of the route from India to the north of Borneo in all seasons of the year.

The present proposals, which are being favourably received by the Governments concerned, by important shipping companies and commercial houses, provide for a daily service between Penang, Port Swettenham and Singapore, and if, as is hoped, a system of co-operation with the Dutch can be arranged, extensions to Belawan (Deli) in Sumatra, Muntok in Banka, and Batavia in Java.

To carry out and maintain this service the formation of a new company, to be called the "Eastern Airways, Ltd.," is proposed, and on the board of directors some of the largest commercial interests in the East will be represented.

Designs have been prepared of two entirely new types of seaplanes. It is considered that these machines not only promise to be particularly suitable to the climatic conditions under which they will have to work, but that they will also prove to be far in advance of any aircraft yet produced.

Both types will be monoplanes constructed entirely of metal. One will be fitted with three engines of 450 h.p., and be capable of carrying a crew of two, 18 passengers, and just under 1 ton of freight and mail when carrying fuel sufficient for 275 miles.

The smaller type will have one engine of 450 h.p., and will carry a crew of two, six passengers and mails to the extent of 180 lbs., and have a range of 350 miles.

The main operating base will be at Singapore, where a large hangar, slipway, offices and stores will be erected.

At Penang it is proposed to provide similar facilities with the addition of a very completely equipped workshop capable of dealing with all machine and engine overhauls and repairs. It is hoped that in the near future the manufacture of spare parts will also be carried on here, and at a later date possibly complete aircraft turned out.

Such an establishment should prove a very valuable national asset in the case of war, as its situation should be ideal for assisting to maintain the supply of aircraft to units of the Services stationed in the East.

At Batavia and Belawan provision is made for hangars, slipways, offices and stores, while at all these bases and also Port Swettenham and Muntok wireless stations, rapid fuelling facilities, moorings and motor boats will be provided.

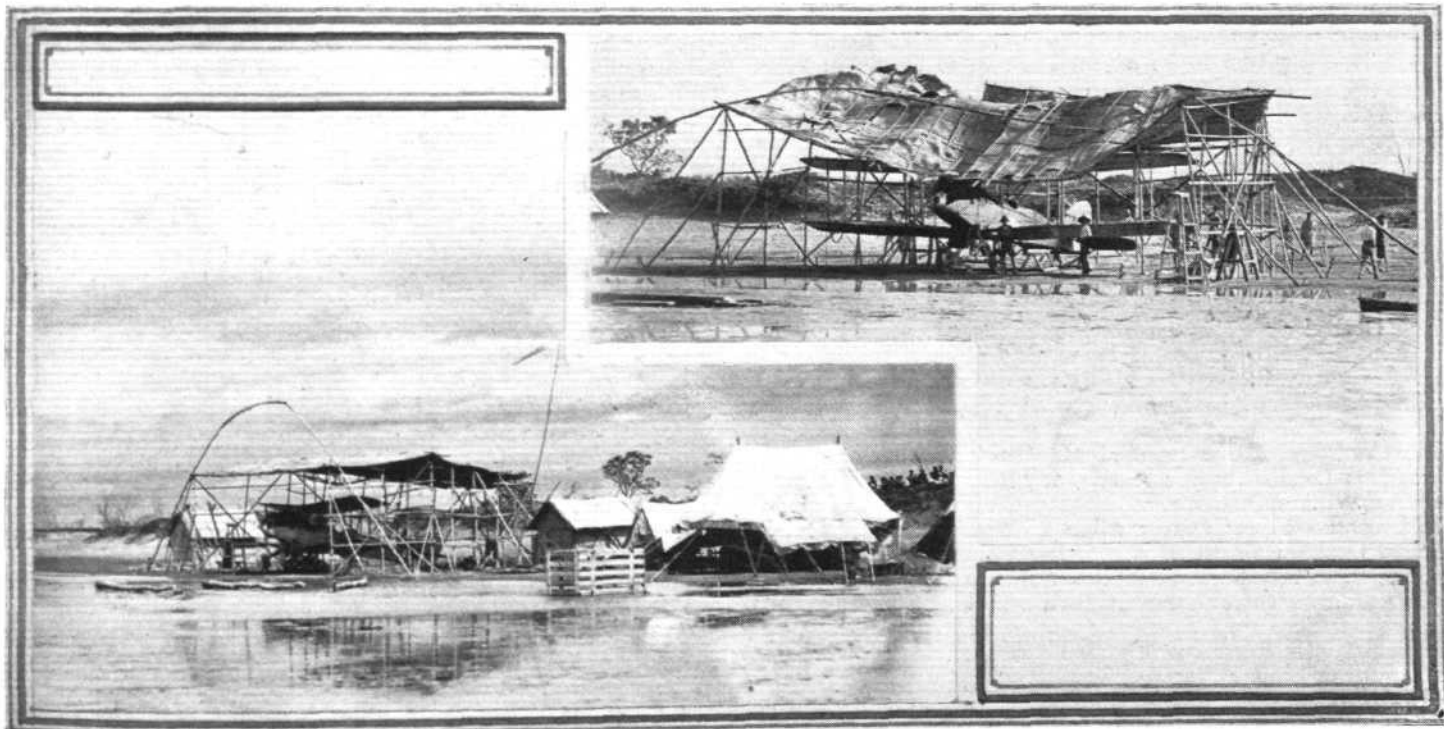
A machine will fly each way between Singapore and Penang daily, except Sundays, leaving at 1.0 p.m. and arriving at 5.13 p.m. Going north it will call at Port Swettenham after 1 hour 58 minutes' flying, and going south after 1 hour 45 minutes. Singapore to Belawan will be flown each way three times per week in 4 hours 13 minutes, allowing for a half-hour halt en route. Batavia to Singapore will be flown each way twice a week in 5 hours 50 minutes, with a halt at Muntok. It is hoped that an adjustment of the timetable at a later date will make it possible to complete the journey from Penang or Belawan to Batavia via Singapore in one day, but for the present it is considered advisable to fly one link only per day. The times to Penang and Belawan will be subject to alterations on two days each week in order that they may connect with the outward and homeward-bound mail ships.

The projected fares will range from \$43 to Port Swettenham, \$82 to Penang, and \$117 to Batavia.

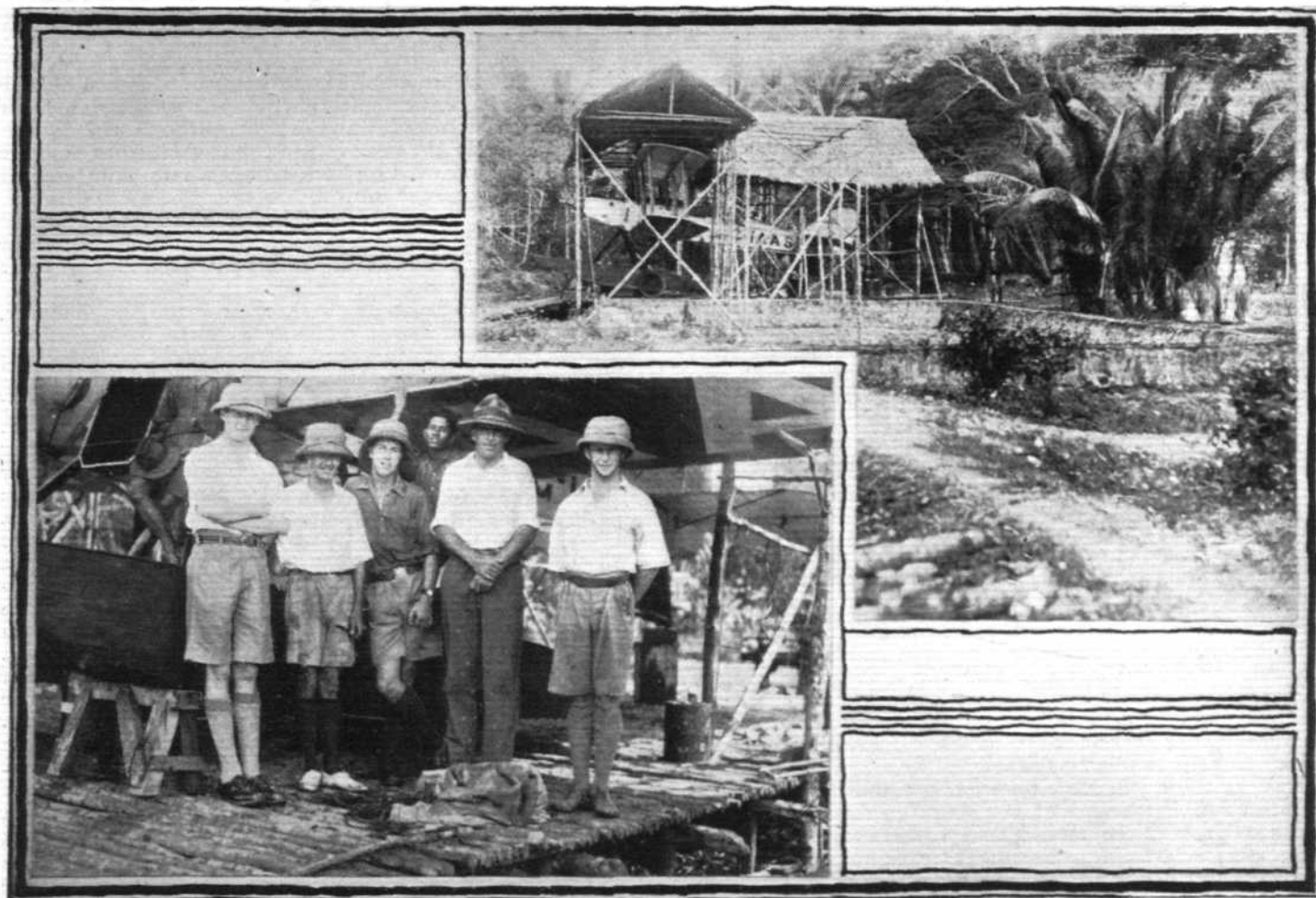
The full advantage of the acceleration to the European mails will not be gained until this service is linked up via Rangoon and India to England, but even with the service as it is at present planned some very considerable saving in time will take place.

Letters posted at noon in Singapore will catch the homeward-bound ship from Penang the same evening, which will make it possible to reply to the home mail of the same week.

The advantages to local mail and passenger traffic will be enormous. Singapore, Batavia, Kuala Lumpur, Penang, and Northern Sumatra, the main centres of commercial



AIR SURVEYING UNDER DIFFICULTIES : These two photographs show the "aerodrome" of the Air Survey Co., Ltd., at Chittagong during a storm and, above, after the storm. The survey party has now left for the Malay States to carry out further surveys. During the Chittagong survey 1,200 square miles were covered by vertical photography. The Malay States survey will include a large-scale town plan of Georgetown, Penang. Mr. Nevill Vincent, one of the firm's pilots, has recently carried Burma's first air mail from Rangoon to Tavoy, a distance of 245 miles, in 3½ hours, whereas the weekly mail boat takes 48 hours. Mr. R. C. Kemp, the managing director of the company, is now in the East superintending the work.



AIR SURVEY IN THE EAST : The upper photograph shows a D.H.9 seaplane, belonging to the Air Survey Co., Ltd., in a somewhat temporary hangar at Port Swettenham. The group below includes Mr. R. C. Kemp, Mr. E. W. Bishop, Mr. R. Thorne, Mr. N. Vincent and Mr. S. H. Trower.

activities in Malaya, will be brought to within a few hours of one another.

Quite apart from the increased opportunities for business that rapid transport cannot fail to bring about, there is little doubt it will prove to be a real boon to residents in other directions.

Owing to the somewhat trying climate prevailing in most

of the big centres, periodical visits to hill stations are necessary for the majority of the European population, but out of an all-too-short leave valuable days are spent in uncomfortable travelling to and from these resorts. With the coming of air transport, visits to these places will be possible at week-ends, and not only will the travelling become comfortable, but it will be delightfully cool and exhilarating in itself.

AT BUCKINGHAM PALACE

THE King held an Investiture at Buckingham Palace on June 21, when the following were amongst those invested by His Majesty with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

Order of the British Empire (Military Division).

Commander.—Miss Joanna Cruikshank, Princess Mary's R.A.F. Nursing Service.

Officers.—Squadron-Leader William Cushion, R.A.F.; Squadron-Leader Arthur Harris, R.A.F.; Squadron-Leader Arthur Williams, R.A.F.

Members.—Flying-Officer Allan Lanman, R.A.F.; Flying-Officer Graham Smith, R.A.F.; Flying-Officer Frank Whitmore, R.A.F.; Sergeant-Major William Webster, R.A.F. His Majesty then conferred Decorations as follows:—

Air Force Cross

Squadron-Leader Harry Smart, R.A.F.; Flight-Lieut. Richard Crofton, R.A.F.; Flight-Lieut. Louis Hilton, R.A.F.; Flight-Lieut. Gerard Oddie, R.A.F., Flying Officer Basil Embry, R.A.F., and Flying-Officer Thomas Stack, R.A.F.

The R.A.F. Dinner Club—and Others

THE R.A.F. Dinner Club, which is holding its Annual Dinner, as usual on the day before the R.A.F. Display, July 1, at Connaught Rooms, will be, literally speaking, absorbing the dinners of two other R.A.F. Clubs! Owing to lack of support,

the No. 20 Squadron Reunion Dinner (fixed for July 2) has been cancelled, but it is hoped that some of the "would-have-dined" will transfer to the first mentioned function. In a similar way, it has been decided to disband the Independent Force (R.A.F.) Dinner Club, and instead, support the R.A.F. Dinner Club to the fullest extent.

British Aircraft Abroad

It is a well-known fact that to sell British aircraft abroad is a difficult matter at the moment. Generally speaking, we believe it may truthfully be said that the majority of nations who do not themselves manufacture aircraft admit the excellence of British aircraft, but point out that by buying non-British aircraft it is often possible to get two machines instead of one, owing to the higher first cost of the British machine. This is a perfectly sound argument, and obviously only by demonstrating that the low maintenance and greater durability of British aircraft make up for the higher initial cost is it possible to sell machines abroad. That being so, it is all the more gratifying to be able to record that the Fairey Aviation Company, of Hayes, Middlesex, has recently obtained an order from the Chilean government for a batch of the latest type of the famous series III machines. These machines are designed to work equally well as aeroplanes and as seaplanes, interchangeable undercarriage units being supplied. The seaplane units incorporate all-metal floats of Fairey design and construction. As this order was obtained in spite of very active foreign competition, it is a healthy sign and promises well for the future of British aircraft abroad.

THE AIR LEAGUE CHALLENGE CUP

We set out below the conditions pertaining to the Air League Challenge Cup, which will be held on the day of the Birmingham Air Pageant, July 16, at Castle Bromwich Aerodrome. It will be held under the competition rules of the Royal Aero Club, and the cup will be awarded to the associate club who enters the aircraft which wins the handicap race organised under these conditions:—

SUPPLEMENTARY REGULATIONS

1. *Date.*—The race will be held on Saturday, July 16, 1927, starting from Castle Bromwich Aerodrome at 2.30 p.m. precisely.

2. *Organisation.*—The race will be conducted by the organising committee of the associated clubs and under the competition rules of the Royal Aero Club.

3. *Competitors.*—The race is open to all clubs associated with the Royal Aero Club. Competing aircraft must be the *bona-fide* property of and registered by an associated club or individual member of such club. The pilot must be a British subject and a member of an associated club. Paid pilot instructors are excluded.

4. *Aircraft.*—The race is open to aircraft the total weight of which when empty must not exceed 400 kgs. (*Note.*—Weight empty signifies total weight in flying order but does not include fuel and pilot.)

5. *Entries.*—The entrant must be an associated club. Entry forms, complete with all particulars duly filled in, must be received by the Organising Secretary, Midland Aero Club, Ltd., 22, Villa Road, Handsworth, Birmingham, not later than 5 p.m., Wednesday, July 6, 1927. The entrant is responsible for the accuracy of all particulars supplied by him to the Committee relating to the aircraft and engine. The officials may require the entrant, at his own expense, to submit the aircraft, including the engine or any part thereof, for examination in order to verify these particulars.

6. *Air Navigation Regulations.*—Competitors must comply with the Air Navigation regulations in force, subject to any concessions which may be made by the Air Ministry.

7. *Certificate of Airworthiness.*—A certificate of airworthiness for the aircraft must be obtained and produced to the appointed official prior to the start of the race.

8. *Course.*—The total distance of the race is approximately 201 miles over a triangular course, divided into three stages of approximately 92, 49, and 60 miles respectively. The race will start and finish at Castle Bromwich aerodrome, Birmingham.

Distances:—	Miles
Castle Bromwich to Sherburn-in-Elmet..	92
Sherburn-in-Elmet to Woodford ..	49
Woodford to Castle Bromwich ..	60
	201

9. *Completion of Stages.*—On arrival at Sherburn-in-Elmet and Woodford aerodrome the competitor, after passing the finishing line, must alight and make a compulsory stay of 30 minutes; any time beyond the 30 minutes will be counted as flying time. The time of completion of each stage will be taken at the moment the aircraft passes the finishing line at a height of not more than 500 ft. After passing the finishing line the pilot must alight and report to the officials in charge. A white flag displayed on the aerodrome will indicate to the pilot the place at which he must report to the officials.

In the interests of safety, pilots must refrain from zooming or suddenly altering their course after passing the finishing line. They must circle left and land, paying special regard to any aircraft which may have crossed the line before them.

Special attention is directed to Article 9 (2) c of the Air Navigation (Consolidation) Order, 1923, as amended by the Air Navigation (Amendment) Order, 1925, as follows:—
"An aircraft in or over Great Britain and Northern Ireland shall not (c) be flown in such circumstances as, by reason of low altitude or proximity to persons or dwellings or for any other reason, to cause unnecessary danger to any person or property on land or water."

The arrangements for starting on the second and third stages are the same as on the first stage (Regulation 11).

10. *Handicap.*—The aircraft will be handicapped on a time-allowance basis. The handicap will be by formula, and will be arranged by the official handicappers of the Royal Aero Club. Aircraft will be started in accordance with the handicap allowance, and will be timed by a given signal to start. The handicap will be proportionally divided over the three sections of the course, so that the first machine in

at either of the aerodromes will be the winner of the completed portion of the circuit.

11. *Starting.*—The position of the starting line will depend upon the direction of the wind, and will be notified to the pilots before the start of the Race. Each pilot and his Aircraft must be at the place allotted to him on the starting line 10 minutes before the official time of starting. Should any pilot fail to start within 5 minutes of being given the signal to start by the Official Starter, he must remove his Aircraft from the starting line if and when so ordered, after which he will only be allowed to start with the sanction of the Official Starter. His time will be taken as from the original signal to start. The Official Starter will stand to the side of the Aircraft, selecting his position so that he can best be seen by the pilot. Ten seconds before the time of starting the Official Starter will raise a red flag. At the expiration of this period the Official Starter will lower the red flag smartly to the ground, this being the signal to start. Chocks (if any) must be removed before the flag is lowered. Any Aircraft crossing the starting line before the lowering of the red flag will be disqualified. The signal to start will not be given until the chocks (if any) have been removed, and the pilot will lose the time caused by any delay in removal. Competitors are solely responsible for the observance of these Regulations by those in attendance on the Aircraft.

12. *Landings.*—Landings during the race will not disqualify the Aircraft, but all time so spent will be taken as flying time.

13. *Repairs.*—Repairs and replacements are allowed. Competitors intentionally discarding, without immediately replacing, any part of the Aircraft or engine, or making any modification to the Aircraft or engine during the Race, will be disqualified. Competitors will be responsible for any infringement of this Regulation by third parties.

14. *Identification of Aircraft.*—For the purpose of identification, all Aircraft must carry the Government Registration Marks as laid down in the Air Navigation Regulations.

15. *Verification of Aircraft.*—Aircraft must be at Castle Bromwich Aerodrome, Birmingham, completely erected for verification by the Officials not later than 8 p.m., Friday, July 15. Infringement of this Regulation renders the competitors liable to disqualification.

16. *Pilots.*—The pilot must not be changed during the Race and no passenger may be carried.

17. *Fuel Supplies.*—The Organising Committee is in no way responsible for the supply of fuel and oil, nor for any delay which may arise in refilling. The competitors themselves must make their own arrangements with the Supply Companies, who will be given full facilities. The nature of the fuel is at the discretion of the competitor.

18. The organising committee reserves to itself the right to add to, amend, or omit any of these Regulations should it think fit.

19. *Prizes.*—The first prize will be £50, presented by Sir Charles Wakefield, the second prize, £35, and the third prize, £15.

Other Events.

The attractions on that day organised by the Midland Aero Club will include the following events:—

1. Low Power Handicap

Open to any type of Aeroplane the total piston displacement of the power plant of which does not exceed 5,000 c.c.

Open to all Pilots. Course approximately 10 miles.

First Prize, £50. Second Prize, £25. Third Prize, £10 if five or more starters.

2. High Power Handicap

Open to any type of Aeroplane the total piston displacement of the power plant of which exceeds 5,000 c.c. Open to all Pilots. Course approximately 10 miles. First Prize, £50.

Second Prize, £25. Third Prize, £10 if six or more starters.

Light Aeroplane.—For the purpose of this Meeting a Light Aeroplane is an Aeroplane fitted with an engine or engines whose total piston displacement does not exceed 5,000 c.c.

Heats.—In the event of entries for any race exceeding six in number, the race will be run in heats of a maximum of six in each heat. Passengers may not be carried in any race.

Entry Forms.—Completed entry forms must be returned to the Secretary, Midland Aero Club, Ltd., by July 6.

The handicap races will take place prior to the Air League Cup Race at such times as to permit Low Power machines to compete in the Cup Race and the handicap races if desired.

AIRISMS FROM THE FOUR WINDS

San Francisco-Honolulu Flight

AMERICAN aeronautical circles are now interested in a new conquest of the air. To bridge the stretch between San Francisco and Honolulu, a distance of 2,400 miles, is the immediate intention of various competitors. On June 27 excitement was raised in San Francisco over the prospect of a start. In the hope of beating their Army rivals, the civilian pilot and navigator, Mr. Ernest H. Smith and Mr. Charles H. Carter, tuned up their Travel air monoplane, fitted with a 200-h.p. Wright "Whirlwind" engine, to make a morning start, although a preliminary full-load test had not been done. It is expected that the flight will take about 24 hours. The American Army pilots, Lieut. Lester J. Maitland and Lieut. Albert H. Hegenberger, set out in their three-engined Fokker machine on June 28. In contrast to the civilian machine the Army machine is fully equipped for emergencies, and will be in wireless communication with either place for nearly the whole distance. A third competitor is Mr. Richard Grace, while a dark horse in the conquest is a naval monoplane piloted by two Navy men.

Round Australia Flight

On their attempt to circle Australia in 11 days, Captain Kingsford Smith, Mr. Ulm and a mechanic covered 860 miles non-stop in 9 hrs. 20 mins. on June 24. They passed over Derby in Western Australia and landed at Broome. The long stage lay over mountainous country, and the engine did not run very well. By working on it all night, however, they were able to continue the next morning, striking for Carnarvon in the North-West Division. Perth was reached at dusk, fog and rain compelling them to descend very low in order to find the telegraph line for guidance. In three days they had covered 4,824 miles. On June 26 they left for Cook, the weather being very bad, refilled there and reached Wirraminna, South Australia, the same day.

And Another

A FORMER officer of the R.A.F., Mr. Keith Anderson, left Sydney on June 25 for a flight round Australia, flying a Bristol biplane.

Amsterdam-Batavia Flight

CONTINUING his flight from Amsterdam to Batavia Mr. van Lear Black arrived at Rangoon from Calcutta at 2.30 p.m. on June 26.

Byrd Still Waiting

COMMANDER BYRD, who is now the last of the American air men waiting to fly the Atlantic at present, is continually being held up through bad weather. Again and again thousands of people flock to his aerodrome at Roosevelt Field to witness his departure only to turn back disappointed. If such bad luck reigns much longer we are afraid Commander Byrd will eventually set off for his Atlantic flight without a cheer.

General Balbo's Visit

GENERAL BALBO, Italian Under-Secretary for Air, who recently carried out an extensive air tour of Italy's air positions on the North African coast, will pilot a Fiat R 22 machine from Rome to London, being due to arrive at Croydon this week. His visit will be official, and he will be the Air Ministry's guest at Claridge's Hotel. Accompanying him will be a squadron of Italian machines which, we believe, are to take part in the R.A.F. Display. It was only a short time ago that General Balbo obtained his pilot's licence. His recent tour included a fine flight of over nine hours non-stop, and a sea flight of over 600 miles.

The Michelin Cup

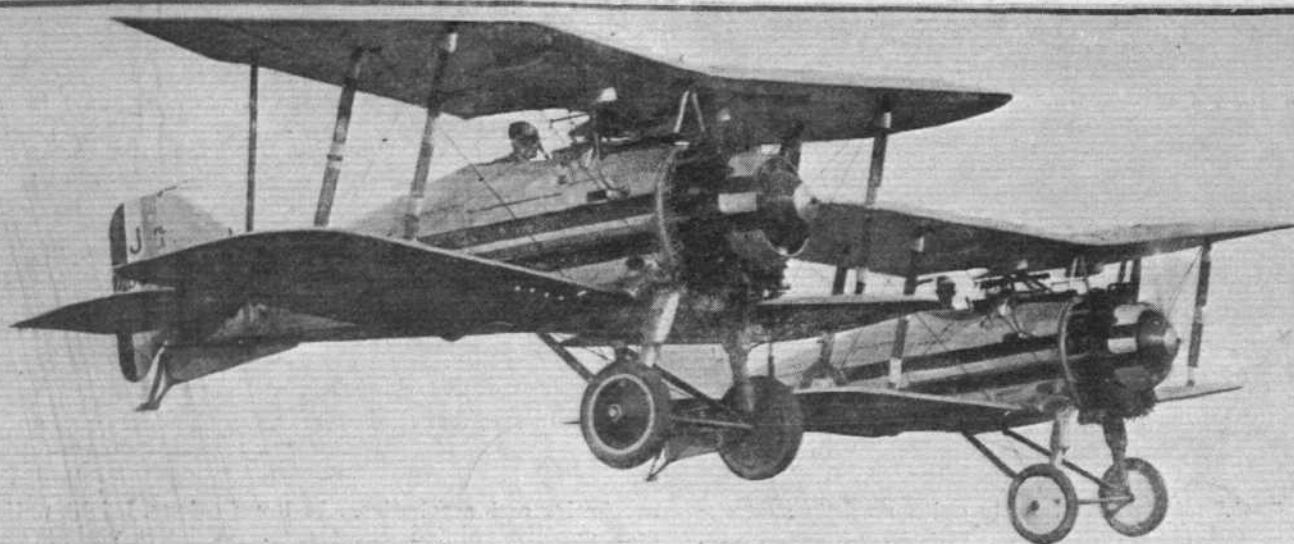
CAPTAIN CHALES won the French International Michelin Cup for his flight round France, a distance of 1,710 miles, with fourteen landings, in 12 hrs. 14 mins. 37 secs. The cup has been held since 1925 by Pelletier d'Oisy.

Cross-Channel 'Plane Mishap

THE air liner, "City of New York," of the Imperial Airways, made a sudden forced landing near a farm at Cudham, Kent, on June 27, with nine passengers on board, four of whom were women. One passenger received a slight cut on the face, otherwise there were no personal injuries. The pilot was Lieut.-Col. Minchin, the pilot who is proposing to fly the Atlantic shortly with another Imperial Airways pilot.



RECORD BREAKERS : The upper photograph, and that on the left, show the Rohrbach "Roland" three-engined monoplane which recently established world's records over 1,000 km. with useful loads of 1,000 kg. and 2,000 kg. The speed was 196.7 km./h. (122 m.p.h.). In the photograph on the right Chamberlin and Levine are seen during a visit to the Rohrbach works, examining the construction of a Rohrbach all-metal machine.



The eighth
ROYAL AIR FORCE
DISPLAY



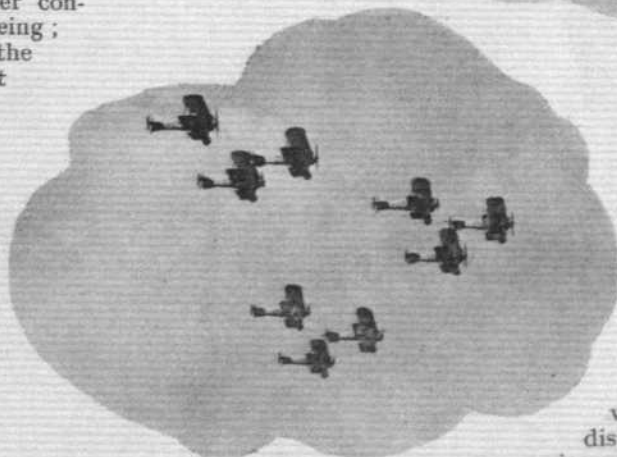
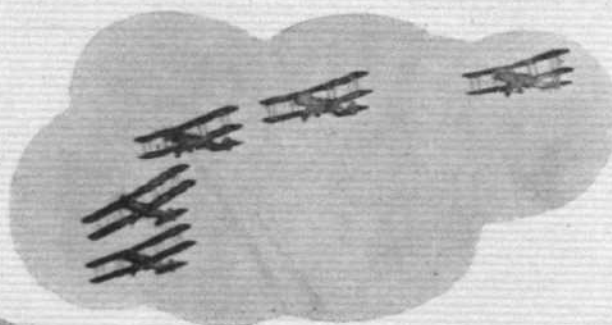
HENDON
1927



ALTHOUGH it is only quite recently that the large crowds at Croydon, Bournemouth, Hamble and other aerodromes have proved that the people of Southern England have definitely become air-minded (the large towns of the Midlands and the North have always been able to produce a healthy throng to watch King's Cup racers arrive and depart), the Royal Air Force Display since its inauguration in 1920 has each year been one of the most popular events of the London season. From the very earliest years the business of getting on to Hendon aerodrome, and still more the task of getting away again, has been a distressing affair. In the bad old days the nearest Tube station was Golder's Green, and the omnibus service from there to the aerodrome was always inadequate. Then Hendon Central station was opened, which helped a little but not very much. Finally, the opening of Colindale station wrought a vast improvement. The purchase of Hendon aerodrome by the Air Ministry enabled the entrances and exits to be made much more convenient. Now the construction of the new road still further facilitates the dispersal of the crowd in the evening. Londoners are hardened to queues and strap-hanging, and all the other concomitants of community sightseeing; and by this time attendance at the Hendon Display is to them not an ordeal in the least out of the ordinary.

It has sometimes been argued that this yearly thronging to Hendon was a proof that the British public always has been air-minded at bottom. The case is difficult to maintain. The perennial popularity of the Royal Tournament at Olympia does not prove that

acrobatics and aerobatics. It loves colour, bright uniforms and gaudily painted aeroplanes. It loves variety on the programme. Last, but not least, it loves a big bang. All these tastes and instincts are amply gratified at the Royal Air Force Display, and we need seek no further for the causes of its extreme popularity. We should, however, be unfair to the Display Committee and to the Press section of the Air Ministry if we overlooked advertisement's artful aid. That advance stories in the newspapers produce a great effect is shown by the contrast between the homecoming of Alcock and Whitten-Brown, of Carr and Gillman on



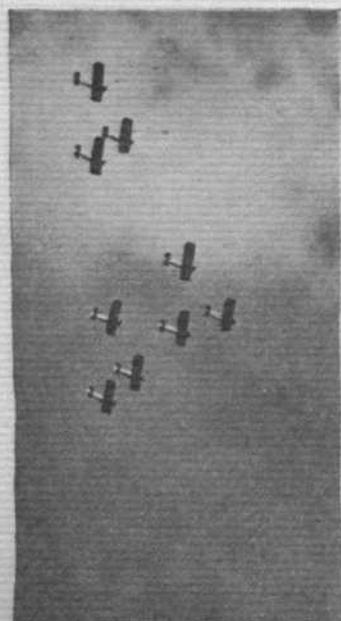
the one hand, and the difficulty which Lindbergh, on the other, had to find an open patch of turf on Croydon aerodrome. The Display has been very well advertised, and that has always produced its due effect.

While it is true that merit does not always command popularity, and practically never achieves it unless it is well advertised, yet the merit of the R.A.F. Display is unique of its kind. We say with considerable confidence that nowhere else in the world could such a display of flying be witnessed. Not only is each event very good of its kind, but the variety of kinds is so great that the man who

was not satisfied would indeed be hard to please. Aerobatics are always a delight to watch, but aerobatics are the one and only particular in which an air display by a civil flying club can rival the R.A.F. Display at Hendon. Air racing certainly was popular so long as the management could show a dozen aeroplanes rounding a pylon like a covey of partridges. But will such a spectacle ever be staged again? We trow not. Aerobatics by themselves will never be able to draw vast crowds to any aerodrome year after year. But to the Royal Air Force aerobatics are only one of many attractions which it has to offer. Let us cursorily examine the programme for Saturday, July 2.

The King and Queen presumably will arrive at 15.30 o'clock, and at that hour the most spectacular events begin. But the aerodrome will have been busy from 11 onwards, and those who go there early will see plenty to interest them. As a matter of fact, provided the weather is not quite so dreadful as it was in 1922, we strongly recommend every one who wants to get the greatest amount of pleasure and comfort out of the day to go to Hendon in the morning and take a picnic lunch with them. Other desirable articles of equipment

Britons are militaristic by temperament. It is not so many years since Rudyard Kipling felt impelled to write the poem "Tommy," in which he urged the public to "prove it to our face the widow's uniform is not the soldier-man's disgrace." But the public undoubtedly is, in the best sense of the word, "jingoistic." It always declares with emphasis, "We don't want to fight," but it very much likes to be able to add "but, by jingo, if we do," &c. Above all, the British public loves a show. It loves a display of power, of drill, of discipline. It loves with impartiality both



are a pair of binoculars and a pair of tinted spectacles. Those who go in cars might find it worth while to take deck-chairs, so that they can gaze upwards for hours on end without getting cramp in the neck muscles. Last year the present writer advised umbrellas; and, purely to spite him, the day turned out one of tropical radiance. This year he will compromise by suggesting *solah topis* with waterproof covers, sunshades, and Mattamacs.

At 11.00 the Marchioness Cholmondeley will present the Sassoon Cup to Flying Officer A. H. Montgomery, of No. 32 Fighter Squadron. The cup was awarded this year for a race between fighter squadrons which was held on May 26 with start and finish at Northolt aerodrome. The course was about 100 miles, with turning points at Duxford and Northolt. The champion of No. 32 Squadron maintained an average speed of 156 m.p.h., and just beat the two other "Gamecocks" from Nos. 43 and 23 Squadrons. Then there will be half an hour of army co-operation work. The machines will use radio-telephony whenever possible, but as a message sometimes includes a map, they will then have to pick it up from the ground—or rather, from a cord stretched between two posts, by means of special hooks suspended below the machines. The A.C. squadrons are Nos. 2, 4, 13, and 16. All are equipped with Bristol Fighters, but No. 13 has been selected to try out the Armstrong-Whitworth Atlas with "Jaguar" engine. This event used to appear on the afternoon section of the programme; but evidently it was judged to be not sufficiently spectacular, or not easily to be understood of the people. This decision seems rather a pity, because our population is still very largely composed of men who have fought in the infantry, and who understand the help which the man who views the battlefield from aloft can give to the "suffering linesman." We offer the suggestion that quite a good story for a "set piece" in future years could be built up round this picking up of messages. If the men on the ground were in khaki and not in blue, the spectators could better appreciate its import.

Two other "morning" events will consist of air races for (a) Air Ministry Directorates (in which three types of machines

will be used—"Gamecock-Jupiter," "Woodcock-Jupiter," and "Flycatcher-Jaguar"); (b) R.A.F. Reserve officers, on Avro "Lynx" machines (this type, by the way, has now been adopted as the standard training machine).

Two instructors from No. 2 Flying Training School (Digby)—Flight-Lieuts. Lydford, A.F.C., and F. J. Fogarty, D.F.C.—will also give an aerobatic display on this same type of machine.

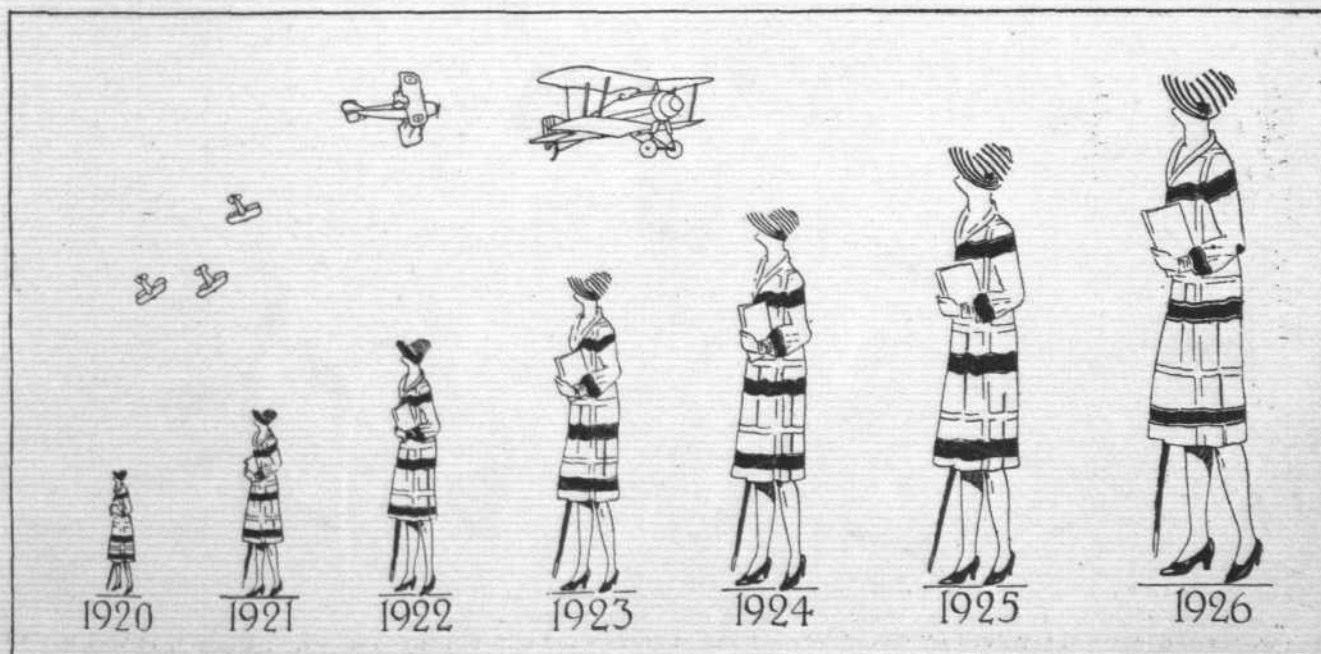
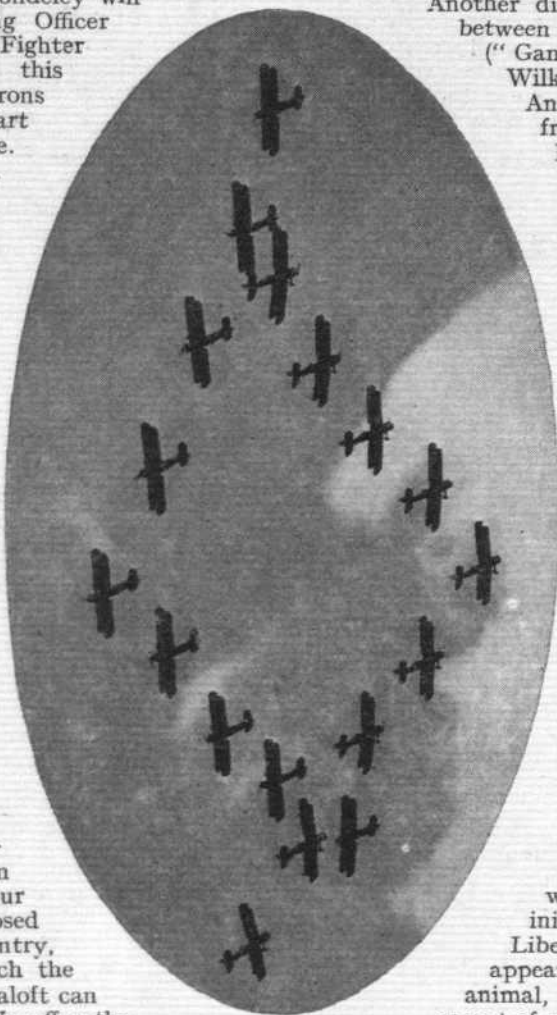
Another display will consist of an aerial duel between two pilots of No. 23 Squadron ("Gamecock"), i.e., Flying Officers F. F. Wilkinson and H. C. G. Dauncey.

An altitude race between four fighters from No. 23 (Flying Officer A. W. B. McDonald, "Gamecock"), No. 32 (Flight-Lieut. J. A. Boret, M.C., "Gamecock"), No. 56 (Pilot Officer T. G. Pike, "Siskin"), and No. 111 (Flying Officer G. B. M. Rhind) will be another interesting event, in which the pilots, provided with oxygen, etc., are expected to attain an altitude of three miles.

Finally, before the display begins in earnest there will be a display of individual aerobatics—first by Flying Officer A. H. Wheeler and Sergt. H. A. Marsh, of No. 111, in Siskins, and then by Flying Officer R. H. Horniman and Pilot Officer H. W. Charnock, of No. 32, in Gamecocks.

The second half commences at 15.00 with half an hour's drill by three bombing squadrons, No. 12 in Fox machines, Nos. 39 and 207 in D.H.9.A's. This year's Display may mark the last appearance in public of the D.H.9.A. with 400 h.p. Liberty. The D.H.9, like the Avro 504 and the Bristol Fighter, is a survival which demonstrates to what excellent heights our designers could rise in the days of the war. But even to the eye of the uninitiated, the combination of the 400 Liberty with the D.H.9 has a hybrid appearance. The mule is a very useful animal, but he lacks the pleasing and suitable aspect of either of his parents. Apart from that, it is more than time that foreign engines disappeared from the equipment of the Royal Air Force.

We shall be sure to enjoy a very lively quarter of an hour while the Grebes of No. 25 Fighter Squadron bomb a moving tank. Until this event is over the spectator is always in doubt as to whether it would not be safer to be inside the



MISS POPULARITY HENDON : In 1920 she was a comparatively small girl, only some 40,000 strong. By 1926 she had grown to 150,000, and it is hoped that this year she will exceed 200,000.

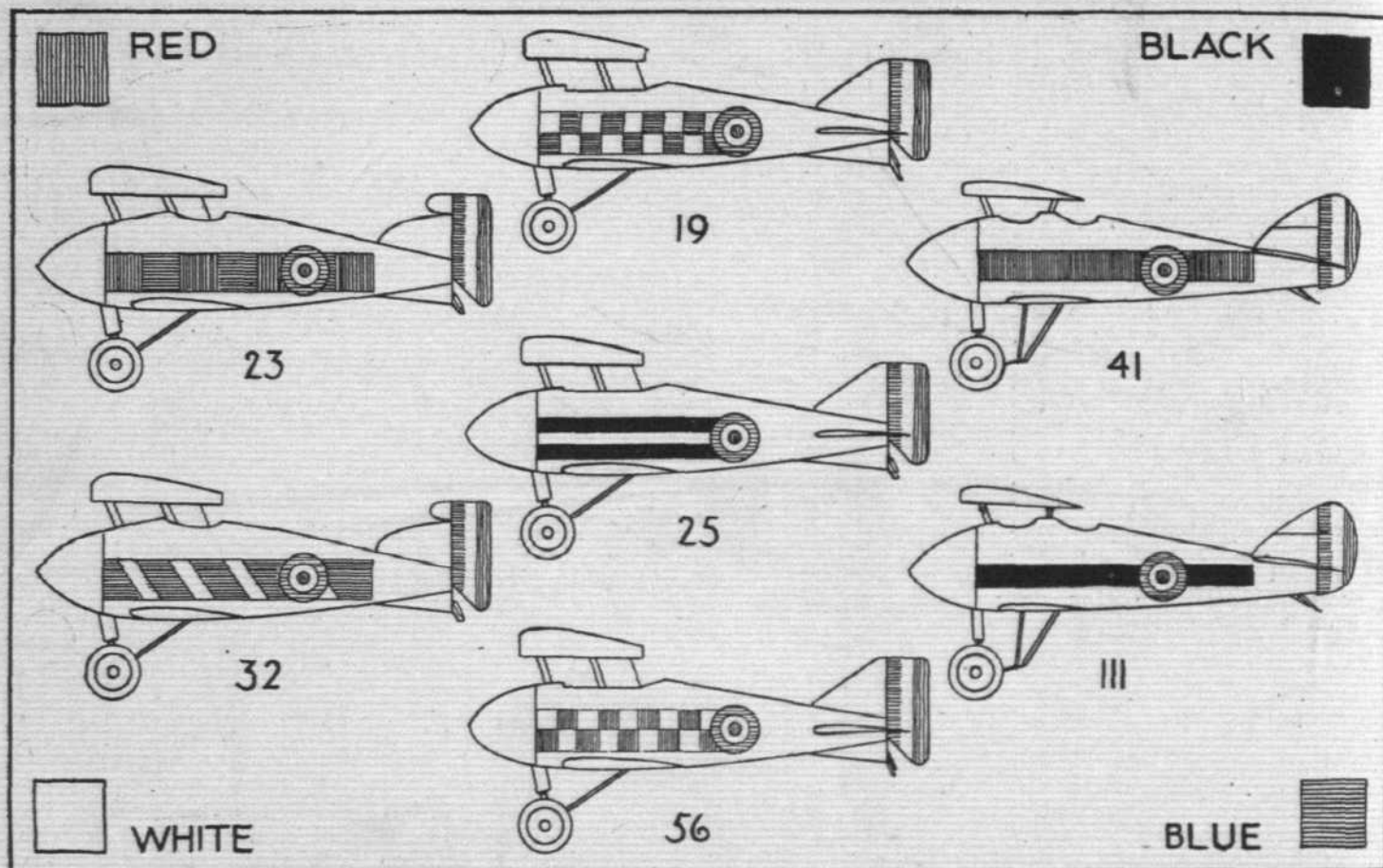
tank than anywhere near it. However, in the great army manoeuvres of 1925 Nos. 56 and 25 Fighter Squadrons made some good bags of tanks.

An event which has probably aroused the greatest expectations of any item on the programme is the musical air drill by No. 41 Fighter Squadron in Siskins. From the spectacular point of view, this event corresponds to the musical ride, an always popular feature of military tournaments and tattoos. For obvious reasons the pilots of the aircraft in the squadron performing the musical flight will not be able to hear the music of the band on the ground in the ordinary way. In addition, spectators on the aerodrome who are not in close proximity to the band will also require some means of hearing the music at some distance from it. Thus, the

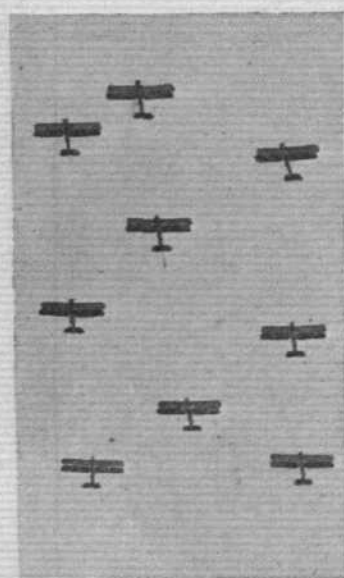
control room where they will be amplified and broadcast to the spectators by means of the loud speaker system.

By way of variety, an event somewhat on the lighter side will be an exhibition of crazy flying by Squadron-Leader J. Noakes, A.F.C., M.M. This officer, who has recently returned from service in Iraq, was the inventor and greatest exponent of this amazing art. He gave the first exhibition of it at the Display of 1921, when he flew a red Avro, which seemed to be seized with a fit of St. Vitus' Dance whenever it passed in front of the Royal box. The late Squadron-Leader W. H. Longton was also to have taken part in this year's event.

Two old favourites, brought up-to-date, will be repeated, viz., the "Fly Past" of new and experimental machines (regarding which we would refer our readers to the illustra-



SQUADRON MARKINGS OF THE R.A.F. : These diagrams illustrate the markings of our various fighter squadrons, and should assist readers who visit Hendon during the Display in identifying individual machines. The numbers on the diagrams correspond with those of the squadrons.



changes of manoeuvre consequent upon changes of tune. In addition, as tunes change, the squadron leader in the air will give the words of command involved by changes of formation to his squadron by radio telephony. His transmission will be received by receiving stations situated at remote points of the aerodrome, and the signals transferred by land lines to the

following system will be employed. Ais have been chosen for the event which are generally known and which lend themselves to aerobatics. A microphone slung over the band position will pick up the music, whence it will be transferred by means of a land line to a central control room containing powerful amplifying apparatus. There it will be amplified and broadcast from 24 loud speakers erected so as to serve all public enclosures. At the same time, a land line will carry the music to a radio telephony transmitting station whence it will be transmitted to the air. Spectators will, therefore, be able to follow

tions with accompanying notes of all the types taking part, which are given on subsequent pages of this issue), and an attack on and destruction of a kite balloon.

A new, and what should prove to be a very spectacular event, will be a display of aerobatics by five instructors from the Central Flying School on "Genet-Moths," while a real thriller will be provided by an air attack on London. In this event, No. 39 Bombing Squadron (nine D.H. 9A's) and No. 99 Bombing Squadron (three Hyderabad) will endeavour to break through and make havoc of the population of London, mostly assembled on Hendon aerodrome. Nos. 19 and 29 Fighter Squadrons (Grebes) will do battle for King and Country. However, we will not anticipate, but we can assure readers that a Hyderabad "going through the motions" of coming down in flames is a great sight.

Finally, from 17.35 to 18.00, there will be play acting, yclept "Set Piece." The advance stories of it have aroused the indignation of various bodies who decline to believe that non-Europeans ever could display unkindness towards missionaries, and who seem to think that if they ever did do so, it would be still more unkind of the Royal Air Force to interrupt their natural and even laudable proceedings. We have, indeed, read somewhere that aged and converted cannibals still look back with pathetic longings on the exquisite flavour of fricasseed missionary. But though the tender-hearted crowd may perhaps shed a silent tear for the heart-rending slip twixt the cup and the lip, it will none the less enjoy the banging of the guns and bombs, and the glorious flare-up of the village of the disappointed gourmets.

F. A. de V. R.

AIRCRAFT TAKING PART IN THE 1927 R.A.F. DISPLAY

SOME 28 different types of Service aircraft—or 29, if we include a kite balloon!—will be taking an active part in the Eighth Royal Air Force Display at Hendon on Saturday next, July 2. Half of these machines will be flying in the various races, competitions, manoeuvres and displays which form the main events down on the programme, while the remaining half, which consist of new—more or less—and experimental types, will be seen in one event only, the always popular "Fly Past."

In order to provide our readers with a form of guide to all these machines which are taking part in the Display, we have, in the following pages, got together illustrations of all the types, together with a few brief notes on each. We have arranged these in two sections, the first dealing with the machines which will be taking part in the various events in the main part of the programme, and the second referring to those participating in the "Fly Past."

For various reasons—mainly owing to lack of space—we are unable to give a detailed description of each machine. Also we have refrained from referring in these notes to the part played by each machine in the various items in the Display, as this may be found in full in the official programme, the proceeds of the sale of which will be devoted to the Royal Air Force Memorial Fund, and which should, therefore, be obtained by every visitor to Hendon on the day of the Display. We give, however, the events in which each type will be seen, and also the Squadrons equipped with that particular type.



Armstrong-Whitworth

"Siskin"

Armstrong-Siddeley "Jaguar"

Events F, G, 3

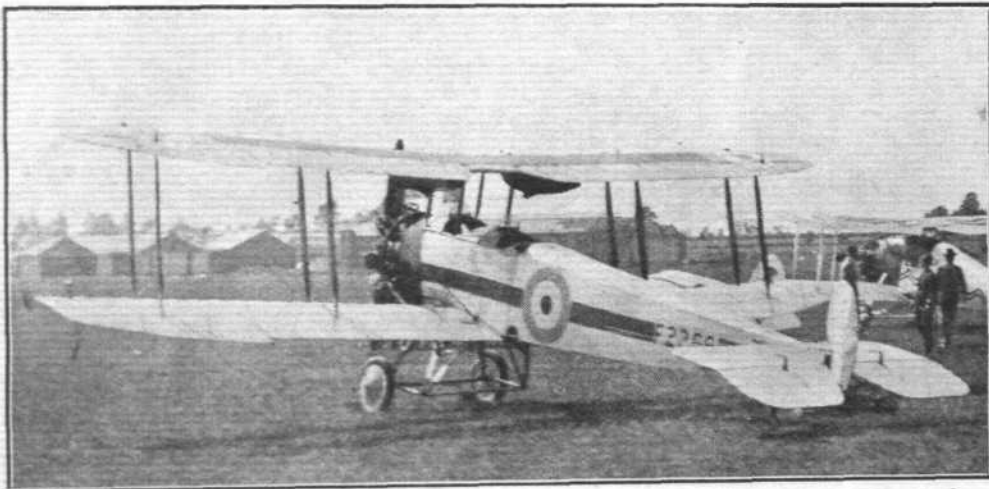
A highly-successful service fighter with several distinctive features. The span of the top wing is considerably larger than that of the bottom wing. The fuselage is of metal construction, and in some cases the wings are also. The undercarriage is a special oleo type. A "Civil" type of the Siskin is very familiar for its records in various racing events, while as a fighter for service purposes it has passed through several series types and is now used by Squadrons No. 41 (Fighter), Northolt; No. 111 (Fighter) Duxford; and No. 56 (Fighter), Biggin Hill.

"Avro-Lynx"

Armstrong-Siddeley "Lynx"

Events C, D

This is one of the offshoots of that ancient and valiant old warrior, the 504K, which was designed as long ago as 1912, and which has since then passed through several modifications—this particular machine being one. Fitted with the Armstrong-Siddeley "Lynx," this version of the 504 has given very satisfactory results. It is safe to say that more pilots have passed through their preliminary training on Avros of various models than any other type. In fact, the Avro is sort of "handy man" always to be relied upon for any purpose.



"Avro-Monosoupape"

Monosoupape "Gnome"

Event 5

Here we have a later version of the old 504K again, fitted with a 100-h.p. "Gnome" engine. It is used considerably for training purposes in the R.A.F., which is not exactly a new sphere of activity for Avro machines, while it has probably initiated more of the public into flying than any other machine. Besides schools, the squadrons equipped with "Avros" generally are: Nos. 24 (Communications), Northolt; 502 (S.R. Ulster); 503 (S.R.), Waddington; 600, 601 (A.A.F.), Hendon; 602 (A.A.F.), Renfrew; 603 (A.A.F.), Turnhouse; 605 (A.A.F.), Castle Bromwich.

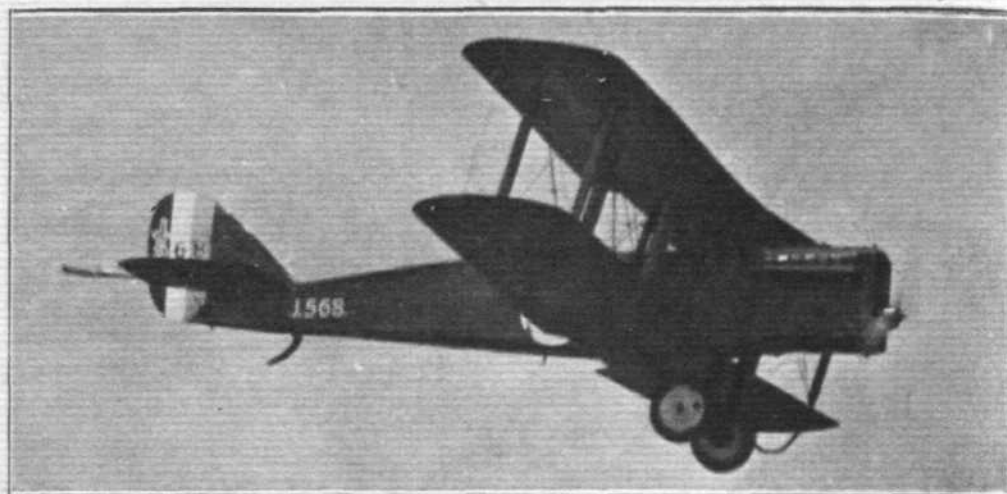


De Havilland "D.H. 9a"

"Liberty" Engine

Events 1, 9, 10

Certain machines like the "D.H. 9a," and the "Avros" have come within the experience of all. The "D.H. 9a" is an old war veteran that has gone through many modifications and is still in service with many bombing squadrons. These are: No. 8 (Aden); No. 14 (Amman and Ramleh); No. 24 (Communications), Northolt; No. 27 (Risalpur); No. 30 (Iraq); No. 39 (Spittlegate); No. 45 and 47 (Middle East); No. 55 (Iraq); No. 60 (Kohat); No. 84 (Iraq); No. 207 (Eastchurch); No. 600 (A.A.F.), Hendon; No. 601 (A.A.F.), Hendon; No. 602 (A.A.F.), Renfrew; No. 603 (A.A.F.), Turnhouse; No. 605 (A.A.F.), Castle Bromwich.

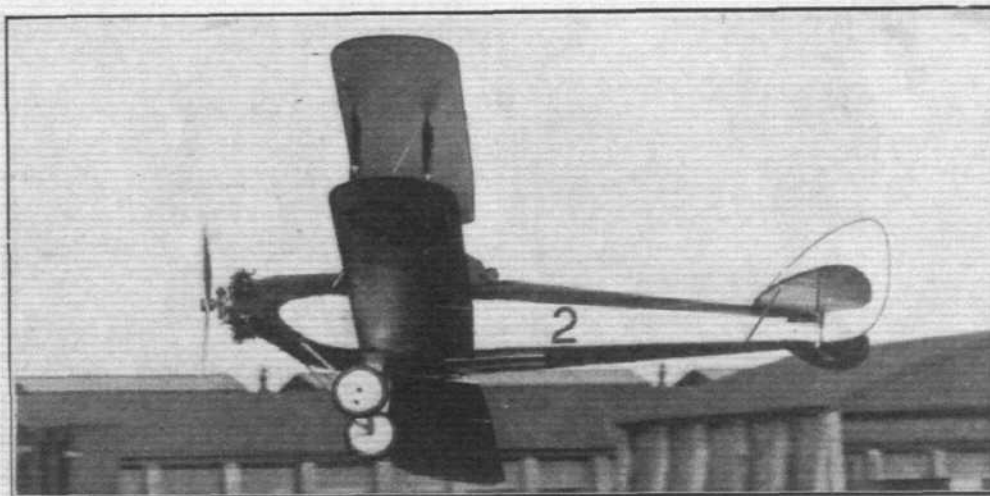


"Genet-Moth"

Armstrong-Siddeley "Genet"

Event 6

In these days there is, perhaps, no machine better known to the public than the "Moth." It is a peer amongst private light aeroplanes and besides appearing successfully at nearly all recent race meetings, it is so far unrivalled in its class for long-distance tours in the British Isles and all over the Continent. It is being regularly produced by the De Havilland Company, for it has created a steady demand amongst private owners. It is the type mostly used by the light aeroplane clubs, and is very popular with the members. Both the "Cirrus" and the "Genet" engines are in use with this machine.

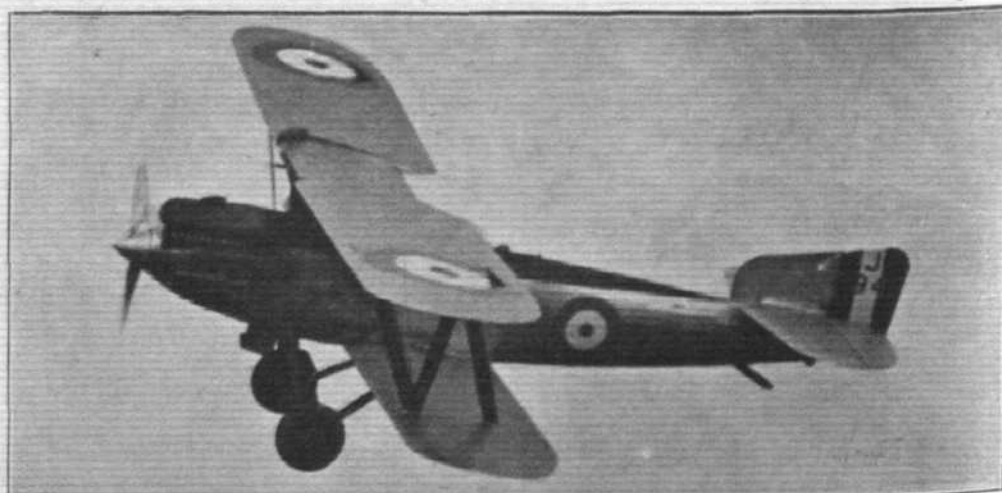


Fairey "Fox"

Fairey "Felix"

Events 1, 10

The Fairey "Fox" is a single-engined two-seater, day bomber, designed entirely by the Fairey Aviation Co.—that is, independently of Air Ministry specification. Apart from its remarkable performance—it is probably one of the fastest machines of its class in the world—the "Fox" has several distinctive features, notably its exceptionally clean lines, as may be seen from our illustration. Note the absence of all excrescences—even to the usual external Scarff gun ring—that would add to head resistance. It is used by No. 12 Bombing Squadron (Andover).



Fairey "Flycatcher"

*Armstrong-Siddeley "Jaguar" or
Bristol "Jupiter"*

Event B

Although primarily a single-seater fighter, the "Flycatcher" is adaptable for other purposes. Thus, it functions as a ship's plane for naval co-operation. Hence the raised nose, which arrives through the necessity for a large ground angle, used in conjunction with the Fairey patented flap gear, which makes for slow landings with heavy loading—a desirable feature for deck-landing. It is also produced as a twin-float seaplane, embodying amphibian gear. "Flycatchers" are used with Fleet Fighter Flights Nos. 401, 402, 403, 404, and 405, on aircraft carriers, and coastal bases.


Gloster "Grebe"

*Armstrong Siddeley "Jaguar"
Events 2, 8, 9*

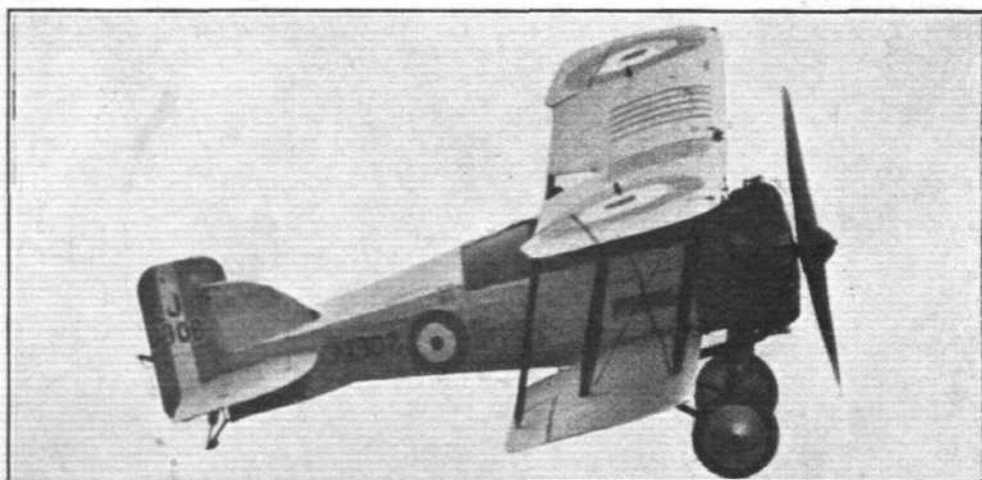
This single-seater fighter, which is used considerably in the R.A.F., has the Gloster characteristic of a thick high-lift top plane and a thin low-lift bottom plane. With this design it is claimed that at maximum speed the top wing takes nearly the whole load, thus approaching monoplane efficiency. It is being superseded by another member of the same family, the "Gamecock" for use in the service, although it is still used by No. 19 (Fighter), Duxford; No. 25 (Fighter), Hawkinge; No. 29 (Fighter), Duxford.

Gloster "Gamecock"

Bristol "Jupiter"

Events B, E, F, H 4

To the eye the main difference between this machine and the "Grebe" is in the nose, which in this case is blunt, and in the other sharp. But it actually embodies many improvements, particularly in regard to ease of accessibility to its various equipment, which is of so much importance in active Service work. It was a "Gamecock," piloted by Flying Officer A. J. Montgomery, that won the Sassoon Cup in the race for Fighter squadrons at Northolt recently. The R.A.F. use this machine in squadrons No. 23 (Fighter), Kenley; No. 32 (Fighter), Kenley; and No. 43 (Fighter), Tangmere, Sussex.

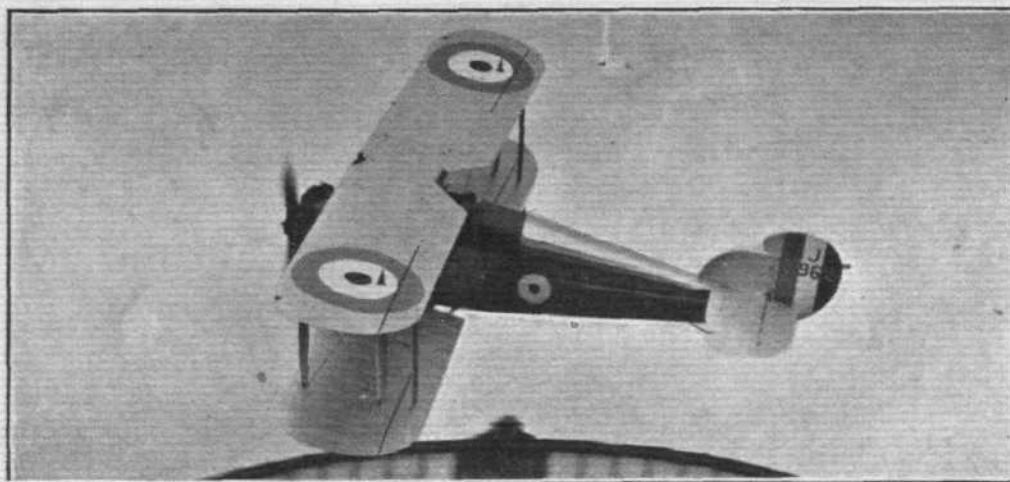

Handley Page "Hyderabad"

*Two Napier "Lions"
Events 7, 9*

The main difference in design between this four-seater medium-range bomber and the familiar commercial cross-Channel type, which originated with the famous 0-400, is in the fuselage construction. It accommodates the crew in tandem, a gunner being in the nose, and the pilot in a raised position just aft of him. There are further gun positions aft, both at the top and bottom of the fuselage. The petrol tanks are beneath the top plane and supply the fuel to the engines by gravity feed. "Hyderabad" are used by Squadron No. 99 (Bombing), Bircham Newton, Norfolk.

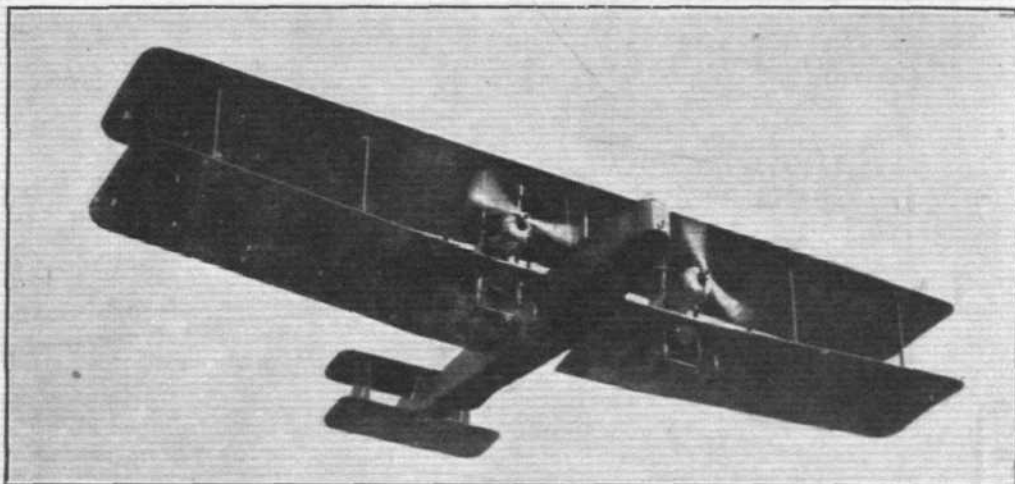
Hawker "Woodcock"
Bristol "Jupiter"
Event B

While outwardly conforming to conventional design, but bearing the distinctive "Hawker Stamp," this single-seater fighter produced by the H. G. Hawker Engineering Co. possesses numerous original features not apparent to the eye. It has, for example, an exceptionally good speed range, being at the same time a very speedy and manoeuvrable 'bus. Descended, so to speak, from the famous war-time Sopwith "Tabloid" fighter, the "Woodcock" is the forerunner of a number of other successful and more recent Hawker productions. In the R.A.F. the type forms the standard equipment of the following two squadrons: No. 3, Upavon, and No. 17, also at Upavon.



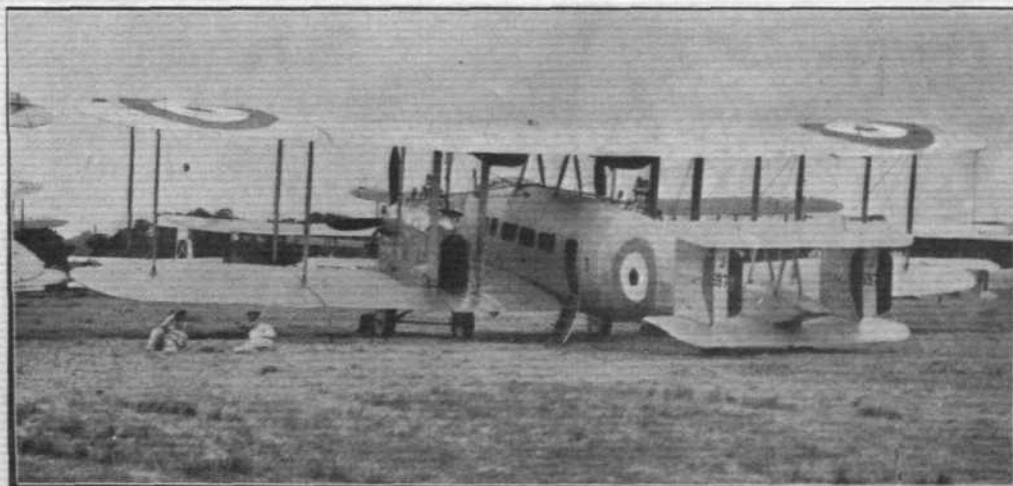
Vickers "Virginia"
Two Napier "Lions"
Event 7

This long-distance bomber was the successor of the famous "Vimy," in which Sir John Alcock and Sir Arthur Whitten-Brown crossed the Atlantic, and Sir Ross Smith and his brother, Sir Keith Smith, flew to Australia. It is a much larger type, however, fitted with more powerful engines, although in general appearance it bears a strong resemblance to the original 'Vimy.' It has a span of 86 ft. 6 ins. and a total loaded weight of 7 tons, while its speed range is about 45-104 m.p.h. "Virginias" are used by bombing squadrons No. 7 (Worthy Down), No. 9 (Manston), and No. 58 (Worthy Down).



Vickers "Victoria"
Two Napier "Lions"
Event 10

A large part of Vickers work in aviation has been the production of giant machines, and the "Victoria" is one of their largest, strongly stamped with the Vickers style. It is another member of the "Vimy" family, and is actually a very large version of the "Vimy Commercial" used some little while back on the London-Continental air services. The "Victoria," which has the same span as the "Virginia," carries two pilots and 23 troops. They are used for troop transport and ambulance work by No. 70 Squadron (Iraq) and No. 216 Squadron (Middle East).



AIRCRAFT TAKING PART IN THE PARADE

APART from the aircraft taking part in the various manoeuvres and displays, a number of new and/or experimental types will be seen in public for the first time during the Parade, or "Fly-past." Although little else will be seen of these machines, the parade will afford a good opportunity for watching them in the air, as they will take off in such a way as to fly, in so far as wind direction permits, parallel with the public enclosures. The machines will not, it is true, be flying "all-out," and so it will not be an easy matter to form any opinion of the relative performance of the different types. Nevertheless, a keen observer will be in a position to catch a glimpse, even if but a rather fleeting one, of each machine as it flies past, and those accustomed to observing aircraft will doubtless be able to note at once the points of special interest.

For the benefit of those of our readers who are not for any reason in a position to watch aircraft regularly, we give, in the following pages, photographs of all the types which will be seen in the Parade, with brief notes on each. These notes are necessarily of a somewhat general character, since many of the machines are still regarded by the Air Ministry as more or less "secret," and it is thus not permissible to give information relating to performance, armament or special equipment.

To enable our readers to identify the machines as they take off, the following notes and illustrations are arranged in the order in which they are scheduled to fly past the enclosures. It should be realised, however, that last-minute delays may possibly result in slight changes being made in this order, so that too great reliance should not be placed on the sequence.

Of particular interest this year is the inclusion in the fly-past of a number of "General Purpose" machines built for a competition held by the Air Ministry for this type of machine. Not all the machines produced for this competition will be represented, but from the four taking part, it will be possible to form a good idea of the sort of machine that was aimed at, and the way in which individual designers have interpreted the specification.



Gloster "Gamecock"

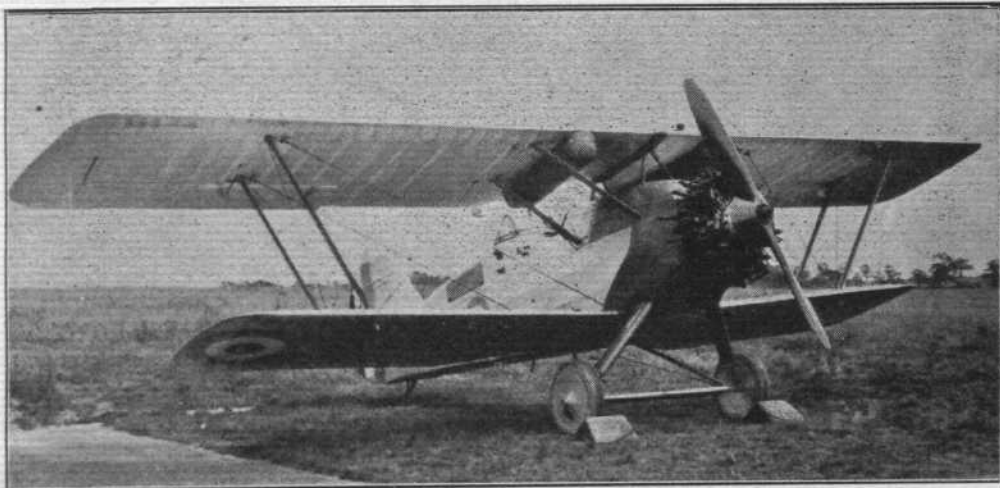
Bristol "Jupiter"

The particular "Gamecock" which takes part in the Fly-past is that on which Flying-Officer Montgomery recently won the race for the Challenge Cup presented by the Under-Secretary of State for Air, Sir Philip Sassoon. The race was won at an average speed of 156 m.p.h. A short and rather "fat" fuselage is a feature of the "Gamecock," which is a direct descendant of a long line of single-seater fighters produced by the Gloster Aircraft Co., whose racing seaplanes have taken part in the Schneider Trophy race in America, and will compete again this year in Italy.

Armstrong-Whitworth "Atlas"

Armstrong-Siddeley "Jaguar"

This is a new type of Army Co-operation machine, designed, as the type title indicates, for work with the Army. The type also took part in last year's display, but the actual machine to be seen this year is a modified version for general purpose work, equipped with petrol tanks on the wings so as to give extra range. Fitted with a supercharged "Jaguar" the "Atlas" maintains a good performance up to 10,000 ft. or so. Dimensions may not be given, but it will be seen that the machine is very small and compact for its work. Armstrong-Whitworth all-metal construction is used throughout.



Short "Chamois"

Bristol "Jupiter"

Short Brothers were the first firm in England to produce an all-metal aeroplane (in 1919), and although they have mainly concentrated on seaplanes, several interesting aeroplanes have been produced, of which the "Chamois" is one. This machine, a night bomber, is built almost entirely of Duralumin, and incorporates a number of constructional features patented by Short Brothers. Thus the fuselage is entirely of this material, even the covering, the fuselage being, in fact, built exactly according to the same principles as those upon which the Short metal flying-boat hulls are based.

No photograph available.

Handley Page "Hinaidi"

Two Bristol "Jupiters"

Unfortunately no photograph is available of this machine, a twin-engined night bomber. Generally speaking, however, the "Hinaidi" is similar to the "Hyderabad," a photograph of which will be found on p. 435. The main change is in the power plant, the "Hinaidi" being fitted with Bristol "Jupiters," while the "Hyderabad" has Napier "Lions." An interesting feature of the engines is that they are of the "Jupiter VIII" type with reduction gearing, which gives a much better propeller efficiency for taking off and climbing. It is claimed that the "Hinaidi" will fly with any one of its two engines stopped.

Avro "Ava"

Two Rolls-Royce "Condor"

This is the most powerful of the aeroplane types taking part in the aircraft parade, its two Rolls-Royce "Condor" engines developing a total of more than 1,400 h.p. An earlier version of the "Ava" took part in the Display last year, but the present machine is new in so far as it is of all-metal construction. The machine is sometimes classed as a day bomber and sometimes as a coastal defence torpedo carrier, the design being such that the machine is suitable for both functions. An idea of the size of the "Ava" may be formed when we point out that the wing span is close upon 100 ft.



Gloster "Goring"

Bristol "Jupiter"

So many successful single-seater fighters has the Gloster Aircraft Co. produced that there are doubtless many who are unaware that the firm produces a number of other types. Among these is the "Goring," a day bomber fitted with Bristol "Jupiter" engine. One would expect from a firm with racing experience traces of careful reduction of head resistance, and the "Goring" shows this effect in several ways. Thus the engine is carefully cowled, while the lower plane wing roots are well faired into the fuselage. There is but one pair of struts a side, in spite of a fairly large span.

Hawker "Horsley"

Rolls-Royce "Condor"

This is the standard day bomber of the Royal Air Force. Quite recently a machine of this type distinguished itself by flying from Cranwell, Lincs, to the Persian Gulf, non-stop, while still more recently another and similar machine was landed safely at Martlesham by Flight-Lieut. Carr, in spite of the fact that it had more than 1,000 gallons of petrol on board. Thus the type has proved itself thoroughly under the most severe conditions. With its 650-h.p. Rolls-Royce engine, the "Horsley" is one of the most powerful single-engined machines in service use.



Boulton and Paul "Sidestrand" *Two Bristol "Jupiters"*

For a day bomber the "Sidestrand" is a somewhat unusual machine, the twin-engine arrangement having certain very considerable advantages connected with view, field of fire, etc. Generally the resistance of the wing engines is a serious item, but by careful study of the flow of the streamlines it has been possible, in the "Sidestrand" to reduce interference effects to a minimum, with the result that the performance is something rather out of the ordinary. The careful planning of the lines of the fuselage should be noted. Needless to say, the machine is of all-steel construction.

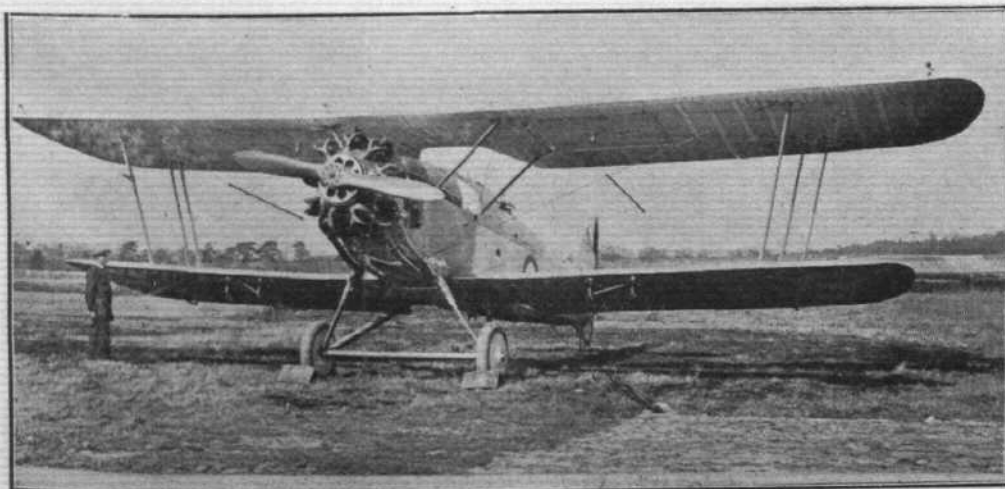


Fairey III F *Napier "Lion"*

The type III F of the Fairey Aviation Co. is one of the "General Purpose" machines for which a competition was held recently. It is also the type used on the recent successful Royal Air Force flight to Cape Town and back, when this great distance was completed to schedule and without untoward incident. The III F has a strong family resemblance to the famous Fairey "Fox," and especially should it be noted how carefully the Napier "Lion" has been cowled in so as to give a clean run over the nose of the machine. In addition to the machines in use by the R.A.F., this type has been ordered by a foreign power.

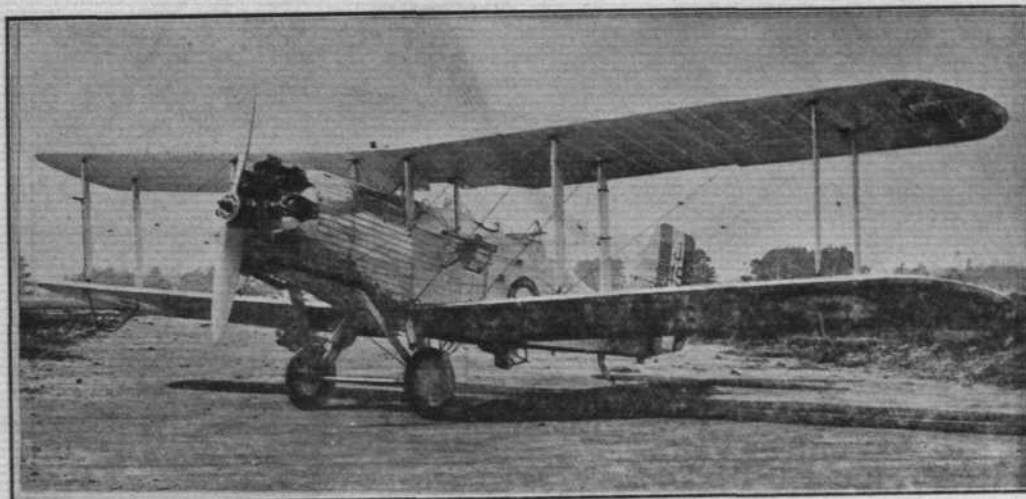
De Havilland "Hound" *Napier "Lion"*

Another "General Purpose" machine, also fitted with the Napier "Lion" engine. Although an obvious De Havilland product the "Hound" represents several departures, and particularly should its clean lines be noted. So good are these that the performance of the "Hound" is quite exceptionally good. In fact, it has been jestingly remarked that the performance is "too good" for a machine of this type. There is nothing exceptional in the general design, no startling changes in arrangement. The high performance is simply due to careful avoidance of interference effects as far as possible.



Vickers "Valiant" *Bristol "Jupiter"*

This machine represents Vickers' interpretation of the General Purpose type specification. Aerodynamically the machine is a clean design of fairly orthodox type, with large span, and consequently a high value of the ratio span²: weight. This makes for low induced drag, and results in good climb. Structurally the "Valiant" is of all-metal construction, of forms developed by this firm during the last few years. Large balanced control surfaces result in great controllability at low speeds. Note also the careful streamlining of the engine cylinders.



Bristol Bulldog
Bristol "Jupiter"

The Bristol Aeroplane Co., as producers of both aircraft and aero engines, has a splendid opportunity for close co-operation between the two branches, and perhaps in no other Bristol machine produced has this fact been made fuller use of than in the "Bulldog," a single-seater day and night fighter of all-metal construction. The manner in which the "Jupiter" engine has been streamlined should be particularly noted. Not only is the extreme "nose" very pointed, and fairings placed in front of as well as behind the cylinder heads, but the overhead rockers have been enclosed in casings. Similar care has been taken in the design of the rest of the machine.



Westland "Wapiti"
Bristol "Jupiter"

As distinct from the majority of General Purpose designs, the "Wapiti" is a two-bay biplane. The proportions of this machine also are slightly different from the others of this class, the nose being longer and the crew placed farther aft. Consequently the cut-out in the top trailing edge is quite small, with a probable gain in aerodynamic efficiency. Although the "Wapiti" is of composite construction, the front portion of the fuselage is covered with Duralumin, ribbed for stiffness. The aileron balances are of the horn type, working in cut-out portions of the main planes.

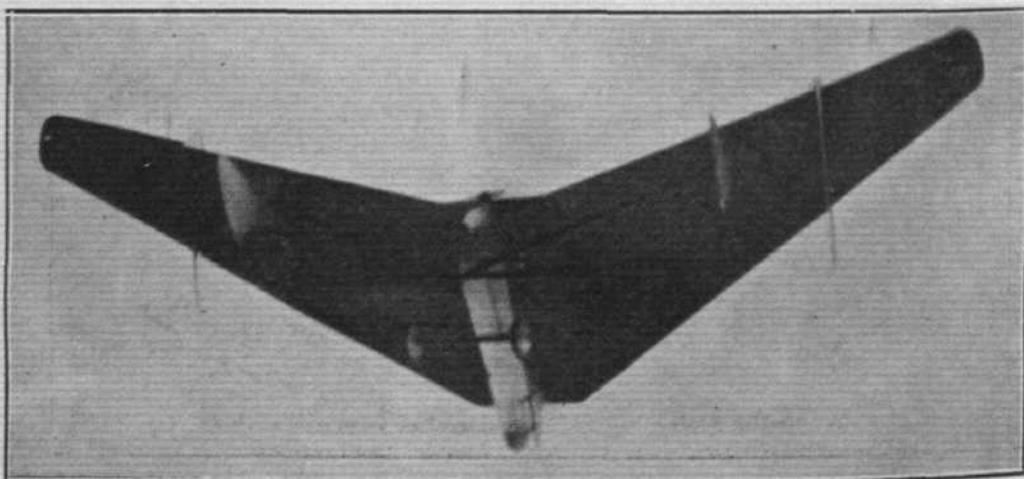


Handley Page "Hamlet"
2 Armstrong-Siddley "Lynx"

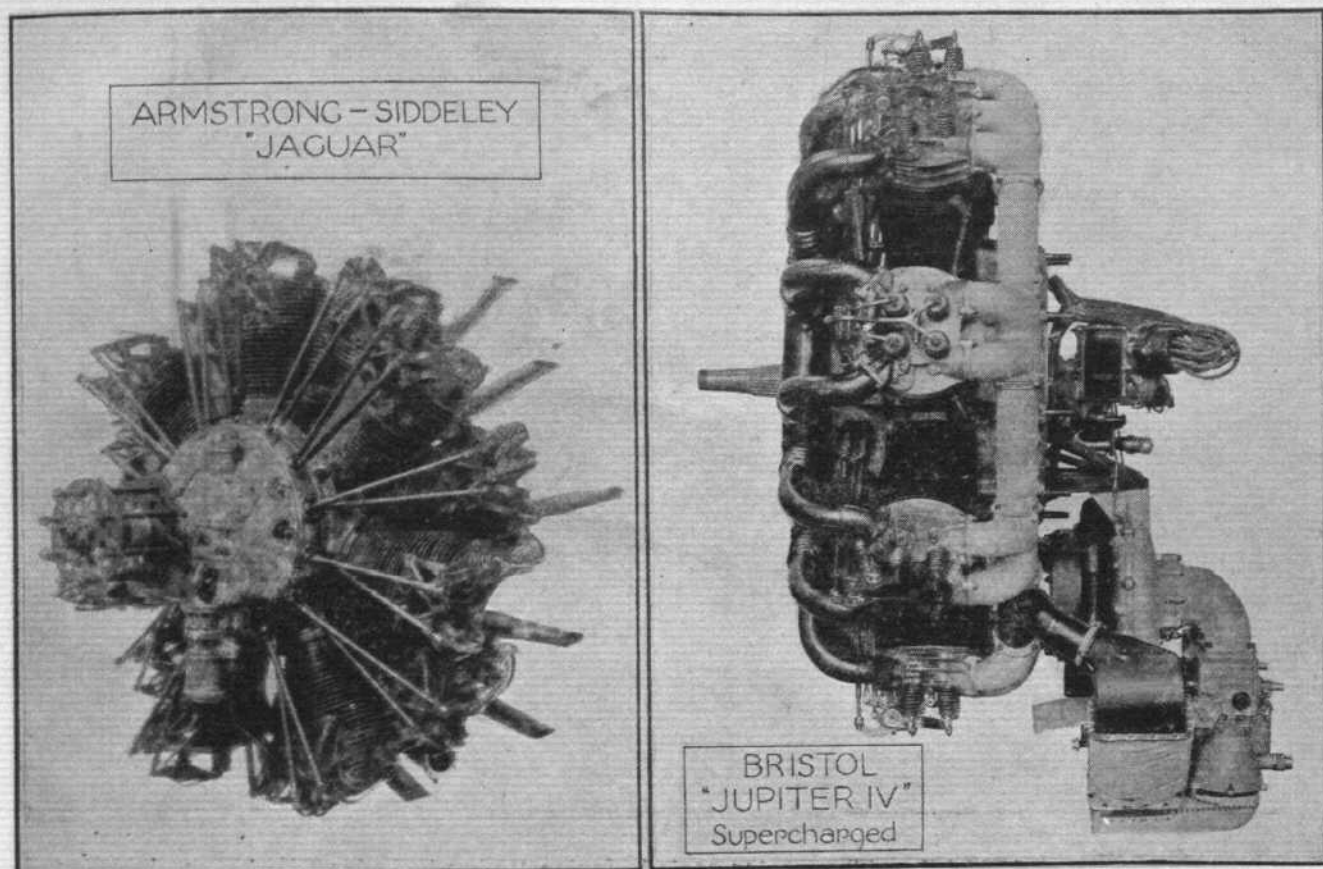
Originally this machine was produced as a three-engined commercial monoplane, and as such was, at the time, the smallest machine of this type in existence. More recently the "Hamlet" has been altered to a twin-engined machine, the place of the central engine now being taken by a "plain nose." A feature of this machine is that it is fitted with the Handley Page patented slot and flap gear, by means of which, for a given wing loading, a lower landing speed is attained. It is, presumably, mainly on account of the latter feature that the "Hamlet" is included in the Parade.

The Hill "Pterodactyl"
Bristol "Cherub"

This machine without a tail represents an attempt on the part of Captain G. T. R. Hill to overcome two bad features of normal aircraft: the sudden "stall," or loss of lift, and the tendency to go into a spin after the stall. The backward sweep of the wings, with "controllers" at the wing tips, appears to have the desired effect, and the machine can be brought down along a steeply-inclined flight path at low velocity, and with the machine itself remaining in an approximately horizontal attitude. The latter would be a desirable feature in a passenger machine. The engine is of 30 h.p. only.



AERO ENGINES AT THE R.A.F. DISPLAY



ENGINES AT THE DISPLAY : Two types of radial air-cooled engines : on the left, the Armstrong-Siddeley "Jaguar" and on the right, the Bristol "Jupiter" (Series IV, supercharged).

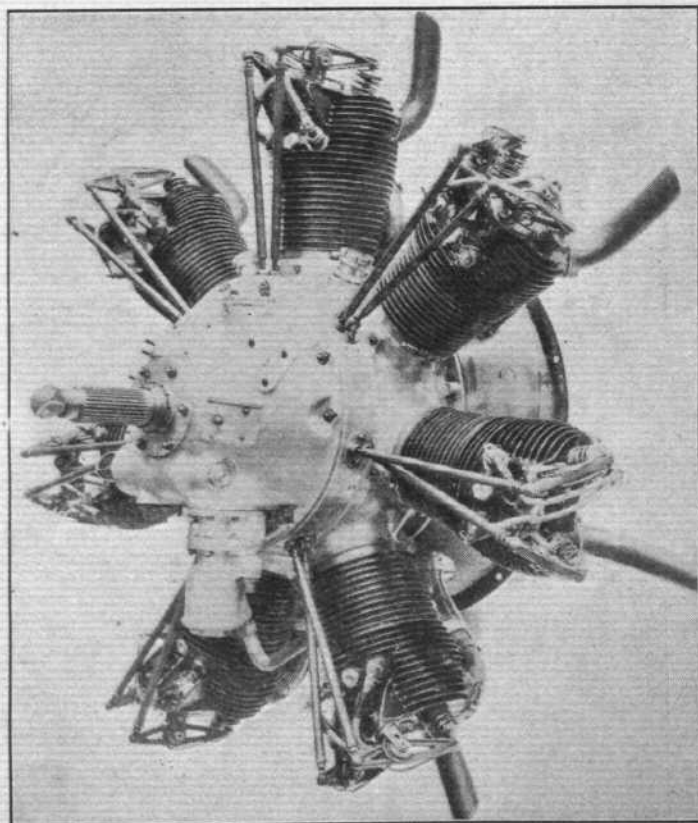
Of the engines which will be seen—and heard—at the Royal Air Force Display on Saturday, there is not much variety. In fact it may be said that there are but four main types forming the standard Service engine equipment in use to-day. There are, however, a few isolated or individual exceptions, such as the Fairey "Felix" fitted in the Fairey "Fox" day bombers; the Rolls-Royce "Falcons" in the "Brisfits" and the "Liberties" in the D.H.9A's, both of which combinations must surely soon be put on "half-pay"; the Siddeley "Lynx" used in a few (in comparison) training Avros; and sundry "Genets," "Monosoupapes" (rotary), "Eagles," and "Cherubs."

Nevertheless, in the main there are but the four types, and of these (which will be at Hendon) two are of the air-cooled type and two are of the water-cooled type—honours being equally divided. In the former class we have the Armstrong Siddeley "Jaguar" and the Bristol "Jupiter," both radials while in the second we have the Napier "Lion," a 12-cylinder "Broadarrow" type, and the Rolls-Royce "Condor," a 12-cylinder "V" type. Each of these types is, of course, sub-divided into series types or models, according to year of production, whether geared, direct or supercharged, etc.

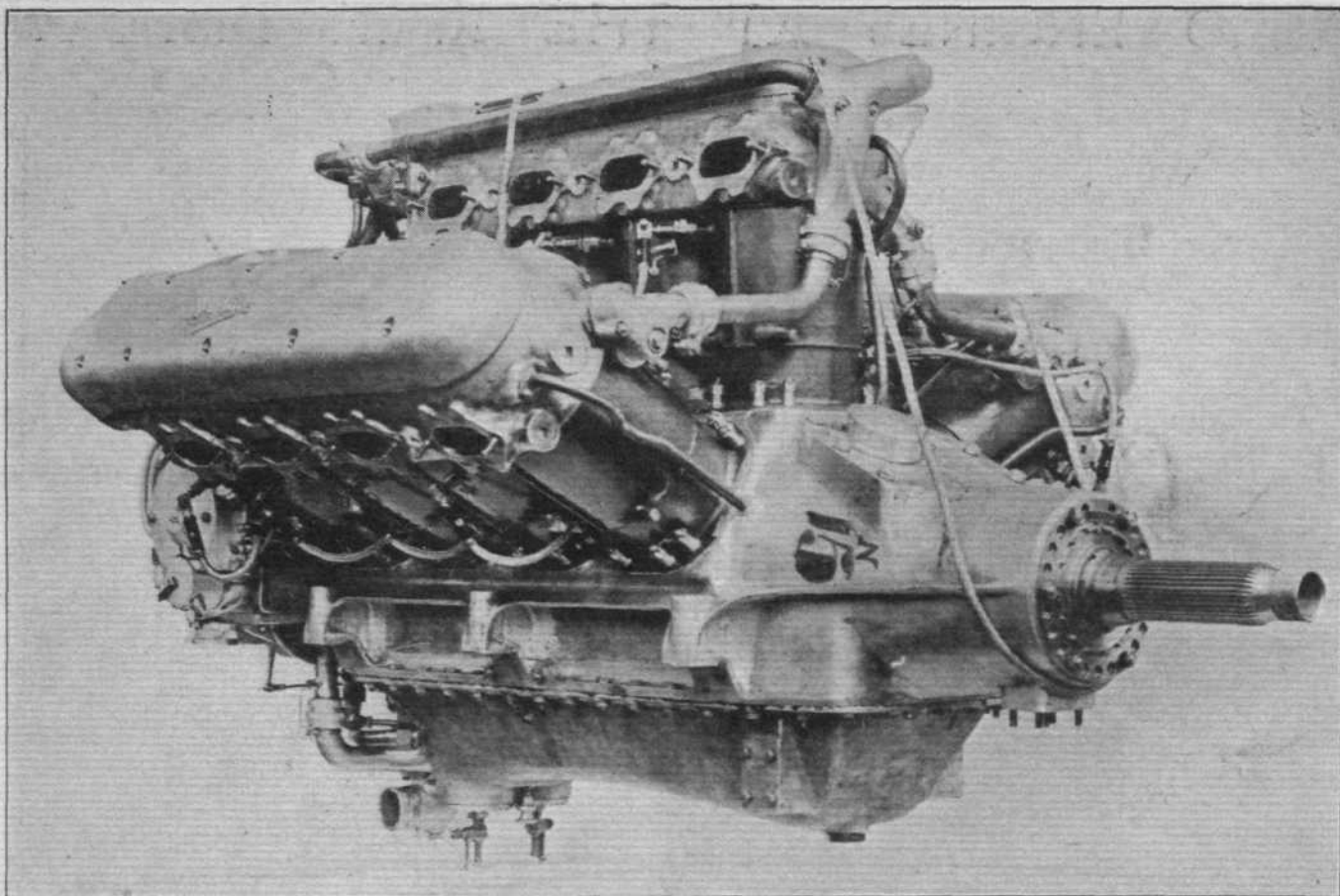
The Armstrong-Siddeley "Jaguar" is a 14-cylinder engine with the cylinders arranged in two radial rows of seven each, the cylinders on one row being placed opposite the gaps formed by the cylinders in the other row. This arrangement not only allows the back row of cylinders to be exposed as much as possible for cooling purposes, but makes a very compact engine with a relatively small overall diameter. The "Jaguar" which is rated at 400 h.p. has, we believe, reached the Series IV stage. The "Lynx" is a 7-cylinder radial, of 180-210 h.p., possessing similar characteristics, having, in fact, the same cylinders as the "Jaguar."

The second type, the Bristol "Jupiter," which has now reached the Series VIII stage, is a 9-cylinder radial, with the cylinders in a single row. The particular engine illustrated is the Series IV—supercharged model, but all the others are generally much the same in design and appearance. The two latest models—Series VII and VIII—will be seen at the Display, the VII in the Bristol "Bulldog" and the VIII in the Handley Page "Hinairi." The Series VII embodies generally the features of the VI, but develops

440 h.p. as against 330 h.p., and is provided with an integral geared supercharger. The Series VIII embodies the Farman patented self-centralising bevel reduction gear of 2 to 1 (for which the Bristol Co., have acquired the sole right in this country).



ENGINES AT THE DISPLAY : The Siddeley "Lynx," which is fitted in the new training Avros.

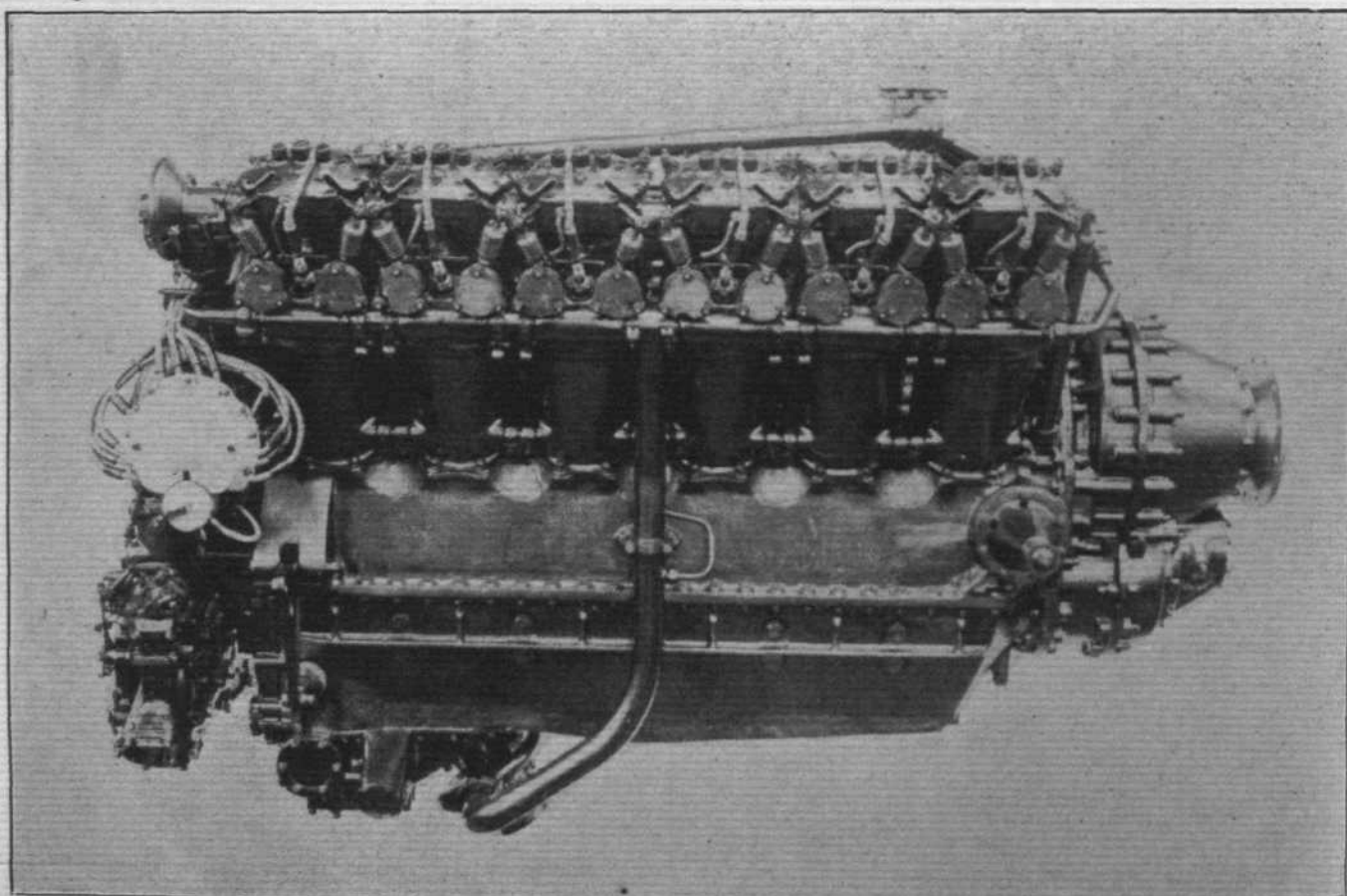


ENGINES AT THE DISPLAY : The water-cooled Napier "Lion," Series VIII (direct drive) model

The Napier "Lion," with its now familiar "broad arrow" arrangement of cylinders, needs little reference here, for ever since it was first produced towards the end of the Great War it has gained world-wide popularity and has built up a remarkably successful reputation. The "Lion," also has reached the Series VIII stage—which model forms the subject of our illustration. Normally, the "Lion" is a geared engine, Series V and VI being supercharged, but there are also direct

drive models and an inverted model (the "Lioness"). The power developed varies from 450-600 h.p.

The Rolls-Royce "Condor" is the most powerful engine employed in British aircraft as standard equipment, for it develops 650 h.p. at 1,900 r.p.m. It is produced in two models, geared and direct drive, and while primarily intended for heavy bombing machines such as the Hawker "Horsley" and the Avro "Ava," it has also been fitted in single-seater fighters.



ENGINES AT THE DISPLAY : The water-cooled 650 h.p. Rolls-Royce "Condor," Series IV model

PRIVATE FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

BRISTOL'S AIR PAGEANT

ON June 22, the Bristol and Wessex Aeroplane Club held their first prominent air pageant at the Filton Aerodrome, Bristol. Fortunately fine weather prevailed and consequently thousands of people flocked to the aerodrome. There was no charge for admission and those who went early had the additional pleasure of watching various machines arrive with distinguished passengers who were taking part in the day's programme. Just after 11 a.m. a flight of Hawker "Woodcocks" from No. 17 (Fighter) Squadron at Upavon arrived, piloted by Squad.-Leader Leacroft, Flying-Officer Thorn, Pilot-Officer Watt and Sergt.-Pilot Tompkins. Air Vice-Marshal Sir Sefton Brancker and Col. H. C. Woodcock, M.P., flew down from Stag Lane in "Moths," piloted by Capt Broad and Capt. Sparks respectively. Col. Woodcock reached Bristol first just after 2 p.m. He is very enthusiastic about flying, and during his election in the Thornbury Division about five years ago he flew round the constituency with Mr. C. Uwins. Lord Ossulston on his "Moth" was another arrival. The pageant opened in the afternoon with a fly-past of the competing machines. There were only two monoplanes, the Bristol "Brownie" and the Parnal "Pixie," piloted by its designer, Mr. Bolas. The other machines were Avro "Avians," "Moths," Bristol Biplane, Avro-Lynx "Woodcock" and H.A.C. light aeroplane. The next event was a handicap race open

to all comers over a course in view of the public enclosure. The turning points were a smoke funnel from the Severn Tunnel, Cribbs Causeway and the Filton Golf Club House. To minimise the danger of overcrowding the race was flown in heats. The first heat was won by Capt. Le Poer Trench on an H.A.C. light aeroplane, and Lady Bailey, on a "Moth," was second. In the second heat Mr. Mackenzie Richards, on an "Avian," was first and Mr. Dudley Watt, also on an "Avian," was second. Following these heats Captain Broad gave a display of stunting on a "Moth." When the final took place it provided many thrills in low flying, particularly from Mr. Dudley Watt. Richards had to retire owing to engine trouble. Le Poer Trench was the winner, Watt second, and Lady Bailey third. The trophy presented to the winner was the Selfridge Cup.

The Utility Race

This event was held for light aeroplanes. The conditions demanded that the machines were to be parked with folded wings, and at the commencement each pilot had to assemble the wings of his machine, start up, fly once round the course, refold the wings, and wheel his machine back to the original parking place. Money prizes were offered for this event as well as a cup for the winner, presented by Mr. Talbot



["FLIGHT" Photographs]

MAKING BRISTOL AIR-MINDED : The upper photograph shows a corner of the public enclosures, while in the lower is seen Col. Woodcock, M.P., addressing the meeting after the distribution of the prizes. On Col. Woodcock's right is the Lord Mayor and Mayoress of Bristol.

O'Farrell, the well-known Irish comedian, who was appearing at the Bristol Hippodrome last week. It was won easily by Mr. Bert Hinkler on his Avro "Avian" fitted with his special undercarriage. Capt. Broad was second, Captain Sparks third, and Lady Bailey fourth.

Second Handicap Race

This event, for the De Prez trophy, produced some thrilling low flying and was won by Mr. Hinkler, Capt. Broad being second and Mr. Watt third.

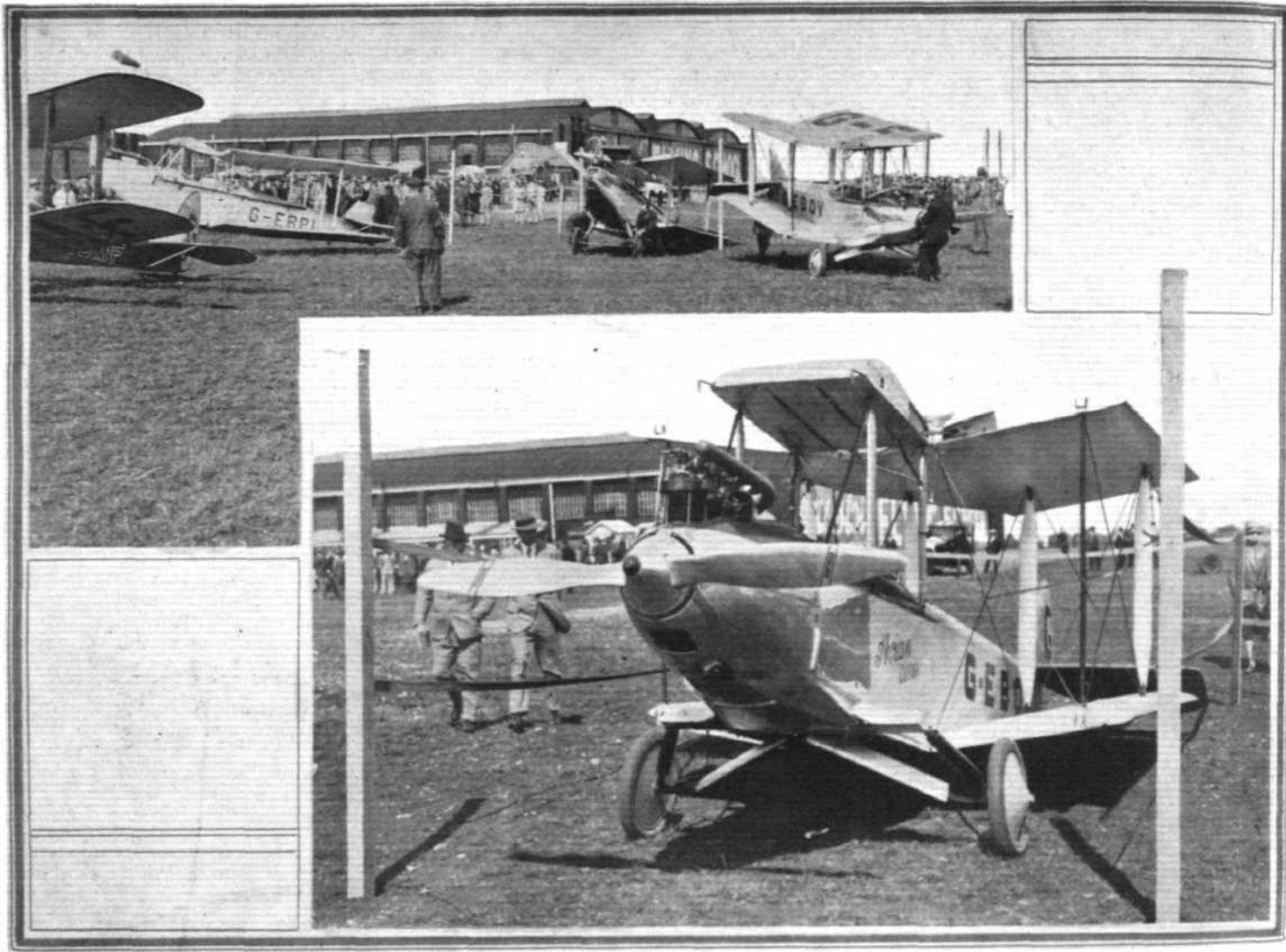
Joy-Riding

Part of the day's interesting programme was devoted to giving free flights to all those who intended becoming members of the club. So many availed themselves of this opportunity that quite a queue formed towards the end of the day,

Automobile Accessories, Bristol. Mr. C. F. Uwins, the Bristol test pilot, was aerodrome manager, Mr. Ashley Hall was press steward, and Mr. A. G. Reynolds starter and time-keeper.

The Lord Mayor (Alderman E. M. Dyer) witnessed the pageant and officially welcomed Sir Sefton Brancker. At the conclusion of events the Lady Mayoress distributed the prizes.

In the evening a public meeting was held at the Victoria Rooms, Bristol. Col. Woodcock presided, and he was accompanied on the platform by the Lord Mayor, Sir Sefton Brancker, Sir Stanley White, Sir Lionel Goodenough Taylor, Major Egbert Cadbury, Lady Bailey, Lord Ossulston, Capt. Sparks, and many others who had taken an active part in the pageant. Col. Woodcock read a number of messages wishing the club success, Sir Samuel Hoare wrote, "I am certain that



THE BRISTOL FLYING MEETING : Above, "Moths" and "Avians" in the Utility Race. Below, the winner of this race, Mr. Bert Hinkler's "Avian," with its new undercarriage. ["FLIGHT" Photographs]

including both men and women. The Bristol Club feels very much indebted to Mr. Overbury of the Hampshire Club, who took up about 40 people, and to Capt. Shaw who took up 15 people (on the Snell "Moth") all free of charge. Mr. Talbot O'Farrell made his first flight at this meeting, going up in a Bristol machine piloted by Mr. Campbell. The popular singer found the cockpit rather a tight fit for his generous proportions, but none-the-less he enjoyed his new experience very much and declared his intention of flying again. The R.A.F. fighter squadron of "Woodcocks" put up a superb exhibition of formation stunting, and Mr. Campbell added considerable attraction to the pageant with some crazy flying on a Bristol biplane, running through a very complete repertoire. Flying-Officer Thorn also gave an exhibition of aerobatics during the afternoon.

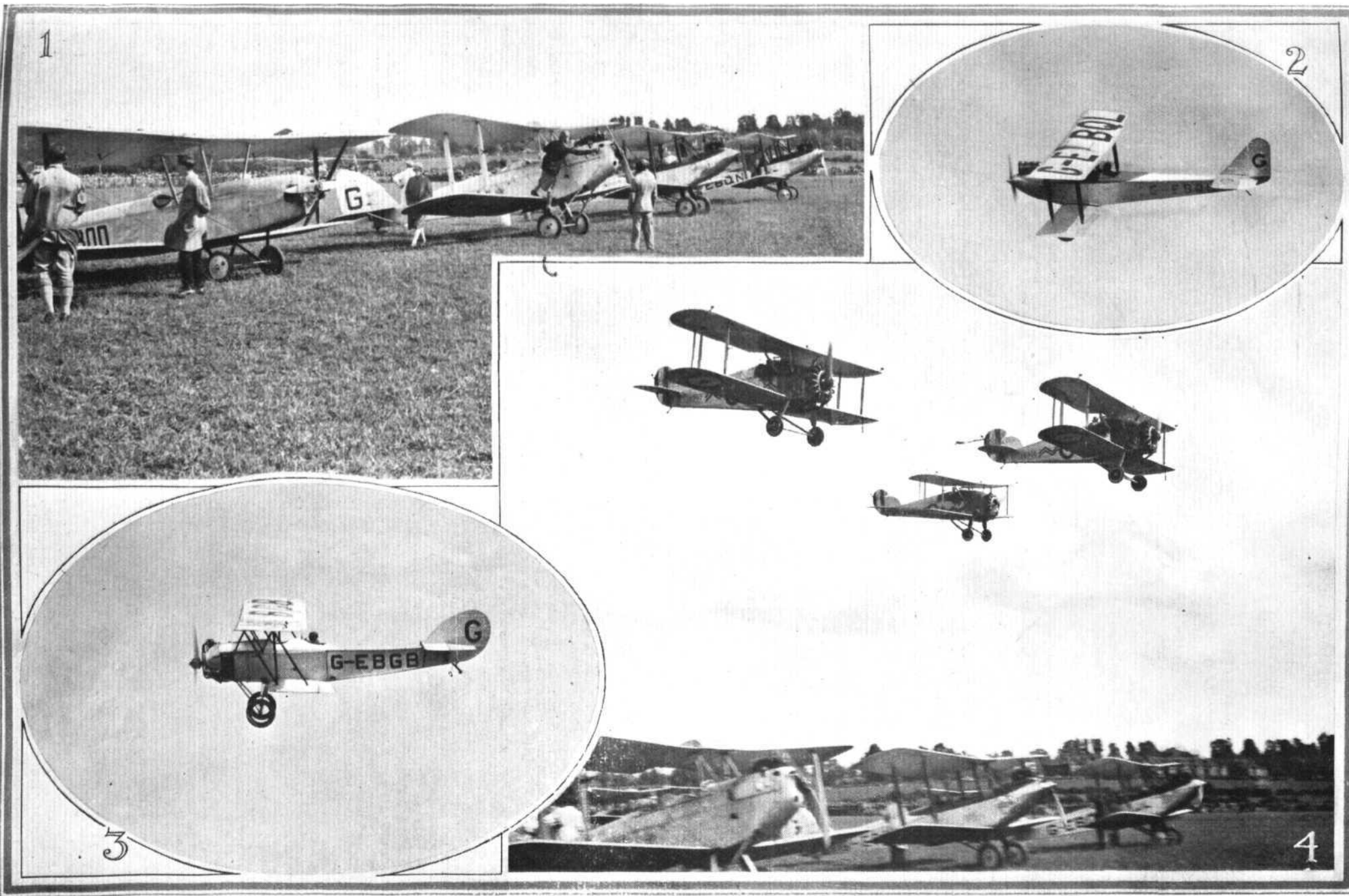
The Arrangements

The series of events and their progress were announced in a very effective fashion by Capt. Brewer, B.B.C. announcer at Cardiff, who is a member of the club. His remarks were conveyed by means of a Graham amplier, supplied by

if, as I hope, the club succeeds, not only will Bristol and the West of England possess a valuable asset but also the country's air defence will be strengthened by the training of new pilots."

The Solicitor-General, Sir Thomas Inskip, who sent a cheque for £25, wrote that the Bristol Club was performing a public service in seeking to attract interest and support for the practice of flying. Col. Woodcock said it was the duty of Bristol, not only from a national point of view, but from a citizenship point of view, to create some enthusiasm that might engender a means of obtaining pilots if necessary in the national defence. Bristol had been a pioneer in aeroplane work. The late Sir George White had created a successful industry which had done great work in the war. Bristol, at the present time, however, was not maintaining its flying position in the country. Their club was not to receive a subsidy, but that should not prevent Bristol and the West of England having a club and supporting it. He anticipated that air transport was going to develop rapidly, and it would be the young men who would take up this work, whilst it was up to others to assist them.

Sir Sefton Brancker said that Bristol had for long been



THE BRISTOL FLYING MEETING : 1, Line-up for the Final of the First Handicap Race. The machines include, from left to right, the Halton "Mayfly," Lady Bailey's "Moth" PU, Watt's "Avian," QL, and the Farnborough Club "Avian," QN. 2, shows "Dangerous Dan" flying in an "Avian" and a trilby hat. 3, Mr. Campbell, on the "Bristol-Lucifer," training machine. 4, Three Hawker "Woodcocks" from No. 17 Squadron give a fine display.

associated in his mind with flying. The late Sir George White had spent enormous sums of money on aviation before he had come into his own.

Through his initiative Bristol had started one of the first flying clubs in 1910, but it had died owing to the impossibility of obtaining aircraft in those times. His first experience of aviation was when Sir George White had sent an expedition of aircraft to India. He (Sir Sefton Brancker) was a staff officer in Calcutta when the expedition arrived there and he joined it as observer. Turning to the financial difficulties of aviation, Sir Sefton said that there were three ways of learning to fly, cheaply, first through a short service commission in the R.A.F., secondly through the R.A.F. Reserve, and thirdly through the light aeroplane club movement. The latter allowed one to learn to fly without any military commitments or Government restrictions. Between September, 1926, and April, 1927, the flying members of the clubs had increased from 573 to 718, the total membership from 962 to

1,241, the holders of flying licence "A" from 59 to 119, and "B" from 8 to 13.

Capt. Sparks then spoke briefly, remarking that the comradeship of flying was the highest he knew.

The meeting was well attended and at the conclusion a strong appeal was made for funds to assist the club by the Lord Mayor, Col. Woodcock, and Sir Sefton Brancker.

The club has already a large number of pilot and associate members. It owns two machines, one a Parnall "Pixie," the generous gift of Mr. George Parnall, and a Bristol "Brownie," the generous gift of the directors of the Bristol Aeroplane Company. Sir Stanley White has given a donation of £500, while five donations of £100 each, and two of £50 each, have been received from other prominent citizens. It is considered that a sum of at least £6,000 should be made available forthwith, half of which is needed for capital expenditure, and half to assure running expenses for the first twelve months. The club should then become self-supporting.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Yate, Gloucester. Sec., C. S. Clarke, Channel Road, Walton Park, Clevedon, Somerset.
Hampshire Aeroplane Club, Hamble, Southampton. Sec., Maj. Ross White, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Sec., C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Sec., Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Sec., A. H. Bell, c/o The Club.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Sec., H. O. Bennett, 5, Opie Street, Norwich.
The Scottish Aero Club Movement, 101, St. Vincent Street, Glasgow. Sec., Harry W. Smith.
Suffolk Aeroplane Club, Ipswich.—Secretary, Courtney N. Prentice, "Hazeldell," Stowmarket, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Sec., J. F. Barnes, 39, Swan Arcade, Bradford.

LONDON AEROPLANE CLUB

The flying time for the week ending June 26, 1927, was 7 hrs. 35 mins.

Pilot Instructors: Capt. F. G. M. Sparks, Capt. S. L. F. St. Barbe.
 Dual Instructors: J. H. Veasey, Miss Spooner, J. R. de Havilland, R. Drysdale Smith, H. M. Samuelson, Dr. Cook.

The club was represented at the Bristol Display by a D.H. "Moth," with Capt. F. G. M. Sparks as pilot. Col. H. C. Woodcock, M.P., Chairman of the Bristol and Wessex Aero Club, appropriately arrived at Filton by air, having flown down from London in the club "Moth."

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending June 26.—This week produced the traditional English summer weather, so our flying time was rather low. To quote the *Daily Mail*, "Wild June weather, with thunder, hail, rain, and gales swept the country during the week."

Total flying time, 15 hrs. 50 mins.; instruction flying, 5 hrs. 50 mins.; solo flying, 8 hrs. 30 mins.; joy riding, 55 mins.; test flights, 35 mins.

The following members had instruction:—Dr. R. R. Morrison, 1 hr. 5 mins.; Mr. Brewster, 45 mins.; Mr. Fortlage, 35 mins.; Mr. A. R. Mellor, 45 mins.; Miss M. Home, 30 mins.; Mr. Wall, 30 mins.; Mr. Cripps, 25 mins.; Mr. Crook, 25 mins.; Mr. E. T. Symons (a member of the London Aeroplane Club), 20 mins.; Mr. Dickson, 15 mins.; and Mr. Whittle, 15 mins.

The soloists were F.O. Overbury, 5 hrs.; Don J. de la Cierva, 1 hr. 55 mins.; Mr. E. T. Symmons, 30 mins.; Mr. S. Fry, 20 mins.; Mr. Ash, 20 mins.; A. N. Other (our modest member again!), 10 mins.; and Lieut. Brodie, 15 mins.

The joy riders were Miss Fry, 30 mins.; Miss Edna May, 10 mins.; Mrs. Fortlage, 5 mins.; and Mr. Glover, 10 mins.

Don Navarro de Palencia flew with Don J. de la Cierva, Miss McKerchal with Lieut. Brodie, Miss Draper and Mr. Gretton with Mr. Ash, Mr. Cross with A. N. Other (the same one!) and Stanford accompanied F.O. Overbury to Bristol, where this member evry ably represented the Hampshire Club at the Wessex meeting on Wednesday. F.O. Overbury carried 28 joy riders at this meeting in an effort to help on the air-mindedness campaign.

LANCASHIRE AERO CLUB

REPORT for week ending June 25.—Typical midsummer weather has prevailed during the week, and during occasional lulls a total of 5 hrs. flying has been accomplished, made up as follows:—Dual with Mr. Brown: Messrs. Torres and Shiers, 30 mins. each; Allett and Miss Baerlein, 25 mins. each; Linaker, 20 mins.; Ward, 15 mins. Solo: Messrs. Ward, 40 mins.; Costa, 15 mins.; Twemlow, 10 mins. Joy rides: With Mr. Lacayo—Mrs. Dunlop, 10 mins.; Miss Easton, 10 mins.; Caldecott, 20 mins. With Mr. Michelson—Miss Mercier, 30 mins. Test flights, 20 mins.

Although we, as a club, have given up flying as a serious pursuit, the air round about is thick with flights and rumours of flights. Our Mr. Brown and our Mr. Cantrill, accompanied by Caldecott and Nelson respectively, are purposing to leave Woodford at a hasty hour on Wednesday morning in the hope of climbing above the clouds which will, no doubt, obscure the sun far more effectively than the moon can hope to do. Our Mr. Leeming, accompanied by a press photographer, will leap off the Southport quicksands in the Avro "Lynx" tourer for the same purpose. Mr. Leeming's jovial countenance has often been likened to the rising sun, and some fear is felt as to whether the press photographer may not inadvertently photograph him in mistake for the genuine article. As at least a dozen other machines will also be groping their way up through the clouds in this neighbourhood at the same time the whole thing reminds one horribly of the start of a long-distance offensive patrol.

Great activity is also noticeable in connection with the Air League challenge cup preparations. Committees meet mysteriously and pore over plans and charts. People of melancholy visage walk about the aerodrome trailing tape measures behind them. Hiding in a dark corner of the hangar Messrs. Cantrill and Goodfellow, the luckless pilots chosen for the race, start with ill-concealed nervousness if anyone mentions "the Pennines" in their hearing, while Mark Lacayo, the reserve pilot, flutters about in terrible anxiety lest either of them should catch a chill.

The *Manchester Guardian* and the *Manchester Evening News* are presenting a prize of £50 and a cup respectively for the first arrival at Woodford aerodrome. When Mr. Cantrill was told of this he inquired gloomily, "What will be in the cup?"

MIDLAND AERO CLUB LIMITED

REPORT for week ending June 26.—The total flying time was 6 hrs. 38 mins.

The following members were given dual instruction: E. P. Lane, R. Cazalet, Capt. J. E. Brewin, N. Crane, J. Edwards, R. L. Brinton.

Solo: E. J. Brighton.

Passenger flights: J. Dugdale-Bradley, N. Crane.

High winds throughout the week very considerably restricted flying.

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending June 25.—Total flying time, 21 hrs. 40 mins. QV, 15 hrs. 40 mins. LX, 6 hrs.

Dual with Mr. Parkinson: Messrs. Thirlwell, Irving, Elmes, Dickinson, Jewett, McDougal, Rasmussen, Twine, Heaton, Shaw, and Mrs. Heslop.
 Solo: H. Ellis, W. B. Ellis, R. N. Thompson, Dixon, C. Thompson, Shaw, N. S. Todd.

Typical race week weather was experienced during the week, a gale blowing all day Tuesday, most of Wednesday, all Saturday, and most of Sunday, complete with heavy hail and rain showers.

On Monday Mr. Parkinson took Mr. W. B. Ellis to Edinburgh, and returned after lunch.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending June 25.—The total time for the week amounted to 7 hrs. 50 mins., consisting of 4 hrs. 35 mins. dual, 1 hr. 35 mins. solo, and 10 mins. test.

The following members received instruction: Messrs. Swift, Priestley, Crouther, Brackenbury, Hylton and Coles. The soloists were Messrs. Mann, Norway, Carter, and L. S. Dawson.

The less we dwell on the club report this week the better.

Sunday: Gale, resulting in Mr. Norway almost being successful in effecting a roll on our Renault Avro while taxiing in. Monday: Gale. Tuesday: Gale, force 12 (Beaufort Scale). Wednesday: Gale. Thursday: Gale and rain. Friday and Saturday: Rain all day.

Only one machine, namely, "EBNN," has been available all the week, but in view of the weather clerk's effort this has not made much difference.

It is remoured that the phenomenal conditions for June may be attributed to the on-coming eclipse. If this is so, we wish it God speed!

Royal Aero Club and Associated Clubs

The following clubs are now associated with the Royal Aero Club:—Halton Aero Club, Hampshire Aeroplane Club, Lancashire Aero Club, London Aeroplane Club, Midland Aero Club, Newcastle-upon-Tyne Aero Club, Norfolk and Norwich Aero Club, Suffolk Aeroplane Club, Yorkshire Aeroplane Club.

respectively, and entrance fees of three guineas, two guineas, and 10s. 6d. respectively. Observer Members are entitled to two hours' free flying per annum as passengers and joy rides at a special charge, whilst Associate Members are entitled to short flights on certain days at a small charge. All members on joining are given a free flight. The Club is affiliated to the Royal Aero Club.

The Suffolk Aeroplane Club

THE new Suffolk Aeroplane Club has the Hon. Lady Bailey for President, and its patrons are the Right Hon. Earl Iveagh, Lord Huntingfield, Sir Charles Wakefield, Sir William Burton, and Mr. Percy Crossman. The Club will consist of Pilot, Observer, and Associate Members paying subscription fees of three guineas, two guineas, and 10s. 6d.

THE ROYAL AIR FORCE

London Gazette, June 21, 1927.

General Duties Branch

The follg. Pilot Officers are promoted to rank of Flying Officer:—J. Blackmore (April 12); H. F. G. Southey (June 16); J. V. Yonge (June 16). Pilot Officer on probation A. M. Butt is confirmed in rank (May 24); Wing Commander J. C. Quinell, D.F.C., is restored to full pay from half pay (June 10); Flying Officer H. W. R. Banting is transferred to Reserve, Class A. (June 22); Flying Officer J. B. Townsend relinquishes his short service commission on account of ill-health (June 22); Flying Officer J. R. Bowring, M.C. (Lt., R.A.), relinquishes his temp. commn. on return to Army duty (May 18) (substituted for *Gazette*, May 17); Flying Officer R. A. King (Lt., R.A.), relinquishes his temp. commn. on return to Army duty (June 19).

The short service commns. of the follg. Pilot Officers on probation are terminated on cessation of duty:—P. A. Hawkesworth (June 15); L. L. K. Honeyball (June 9).

Stores Branch

Flying Officer M. F. Tomkins is granted a permanent commn. in this rank with effect from Oct. 1, 1926 on completion of probationary service; Pilot Officer C. P. Marshall is promoted to rank of Flying Officer (March 10); Squadron Leader H. T. Foxen relinquishes his short service commn. on account of ill-health (June 17).

Accountant Branch

Flight Lt. W. Rollison is transferred to Reserve, Class C (June 15).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The follg. are granted commissions in Class A.A. as Pilot Officers on probation:—E. F. Rhodes, D. F. C. Brecknell (June 8). The follg. Pilot Officers are promoted to the rank of Flying Officer:—H. W. Knott (May 10); H. A. Denny (May 24); A. F. Waghorn (May 30); R. A. Kendrick (June 7). The follg. Pilot Officers on probation are confirmed in rank:—H. Bradley (June 7); H. N. Miller (June 21).

Flying Officer H. Preston is transferred from Class A to Class B (June 21). The commission of Pilot Officer on probation S. J. Barlow is terminated on cessation of duty (May 20).

AUXILIARY AIR FORCE

General Duties Branch

No. 600 CITY OF LONDON (BOMBING) SQUADRON.—The follg. to be Pilot Officer:—E. A. Burton (June 21).

The follg. Flying Officer to be Flight Lieutenant:—C. G. Jenyns (May 30).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commanders: J. C. Quinell, D.F.C., to No. 10 Group, H.Q., Lee-on-Solent, for Air Staff duties, 10.6.27. C. C. Miles, M.C. to R.A.F. Depot, Uxbridge, 10.6.27.

Squadron Leader: R. D. Oxland, to No. 2 Flying Training School, Digby, 23.5.27.

Flight Lieutenants: B. J. Silly, M.C., D.F.C., to R.A.F. Depot, Uxbridge, 22.5.27. H. J. Collins, to H.Q., Iraq, 25.5.27. D. E. Ward, to Air Ministry, Directorate of Training, 6.5.27. P. R. T. J. M. I. C. Chamberlayne, A.F.C., to No. 13 Sqn., Andover, 10.6.27. Richard Harrison, D.F.C., to No. 30 Sqn., Iraq, 25.5.27. H. W. Clayton, to Armament and Gunnery Schl., Eastchurch, 23.6.27. J. L. Kirby, to No. 39 Sqn., Spittlegate, 6.7.27.

Flying Officers: J. W. Caddy, to Aircraft Depot, Iraq, 22.5.27. C. H. Johnson, to H.Q., Iraq, 12.5.27. R. Scott-Taylor, to No. 6 Sqn., Iraq, instead of to H.Q., Iraq, as previously notified, 20.4.27. L. S. Potter, to No. 70 Sqn., Iraq, 23.5.27. A. L. Ottway, to R.A.F. Depot, Uxbridge, 26.3.27. C. A. Bell, to No. 16 Sqn., Old Sarum, 26.5.27. H. Hollick-Kenyon, to Night Flying Flight, Biggin Hill, 22.6.27. Ernest Whittlesea, M.B.E., to Home Aircraft Depot, Henlow, 1.6.27. J. C. Lewis, to No. 28 Sqn., India, 21.5.27. C. W. McK. Thompson, to No. 43 Sqn., Tangmere, 15.6.27. C. E. N. Guest, to No. 15 Sqn., Martlesham Heath, 1.7.27.

Pilot Officers: Horace Waring, to No. 480 Flight, Calshot, 13.5.27. E. G. Olson, to No. 27 Sqn., India, 20.5.27. C. D. G. Welch, to No. 5 Sqn., India, 20.5.27.

General Duties Branch

Squadron Leader F. G. D. Hards, D.S.C., D.F.C., to H.Q., Coastal Area, 1.7.27.

Flying Officers: R. F. Overbury, to Marine Aircraft Experimental Estab., Felixstowe, 11.7.27. W. C. Yale, to No. 502 (Ulster) Sqn., Aldergrove, 21.6.27. V. S. Bazalgette, to No. 16 Sqn., Old Sarum, 21.6.27.

Pilot Officers: E. T. M. Smalley, to No. 99 Sqn., Bircham Newton, 21.6.27.

IN PARLIAMENT

Royal Air Force Long-Distance Flights

LIEUT.-COMMANDER KENWORTHY, on June 20, asked the Secretary of State for Air whether any information was made public about the return of Lieutenants Carr and Gillman, of the Royal Air Force, to London after their flight of 3,425 miles; what steps were taken to see that the public generally had an opportunity of welcoming them on their return if the people so desired; and whether, in the event of another successful flight, especially if India is reached in one flight by officers of the Royal Air Force, an opportunity will be given to the public to welcome the officers on their return to this country?

Sir Samuel Hoare: The answer to the first part of the question is in the negative, but I may add that steps were taken to convey to the officers immediately on their arrival in London my congratulations on a flight that, though it did not succeed in establishing a record, can certainly be numbered among the great achievements of British aviation. If a successful flight is made in the future, as I hope will be the case, I shall certainly consider how best to reconcile the desire of the Service to treat these and similar flights as undertaken in the course of duty with the desire of the public to show their appreciation of a fine achievement.

Lieut.-Commander Kenworthy: In the event of a flight to India being successful, surely the right hon. gentleman will not hesitate to allow the public to make some demonstration of congratulations to these people?

Sir S. Hoare: I certainly cannot, even if I so wished, prevent the public making any demonstration they desire to make. One has at the same time to consider the point of view of the Service, the officers of which regard these flights as duty flights, undertaken in the course of their duty, and the feeling among officers of the Air Force is against publicity. It is my duty to attempt to reconcile this very legitimate desire on the part of the officers in the Air Force with the equally legitimate desire on the part of the public to show their appreciation of a fine achievement.

Lieut.-Commander Kenworthy: I can quite appreciate the right hon. gentleman's view, but has he considered this side of the question, namely, that it is of great assistance to British prestige that the world should know that these great flights have been made?

Sir S. Hoare: I have certainly considered that side of the question. I am anxious to reconcile the legitimate desires both of the Air Force and of the public.

Capt. Gunston: Will my right hon. friend say if there is another attempt likely to be made before the autumn?

Sir S. Hoare: We are at present considering that question. So far as I can see, it will not be possible to make another attempt before the early autumn, owing to the monsoon having broken in the north of India. I

think, on the whole, it is better to await a time when no unnecessary risks will be incurred.

Long Distance Flights

LORD APSLEY, on June 22, asked the Secretary of State for Air if he can now make any statement on the recent attempt of Lieutenants Carr and Gillman to reach India; whether the cause of the failure was due to fault of engine or structure; whether he is aware of the success all-metal monoplanes are having for long-distance flights in America and Germany; and whether similar designs are under construction for the Royal Air Force and Imperial Airways?

Sir P. Sassoon: As regards the first part of the question, the damage which was sustained by the machine in hitting the water makes it improbable that the exact cause of the forced landing will ever be ascertained with certainty. The evidence available points to its being probably due to some temporary stoppage of the petrol pipe and not to any inherent defect in the construction of the aircraft or engine, which have both given excellent results under normal service conditions.

As regards the remaining parts of the question, I have noticed with interest the recent performances of all-metal monoplanes in long distance flights and their development has been carefully followed by the Air Ministry. Several types of all-metal machines have been built or are at present under construction in this country and some of these would be capable of carrying out long distance flights, but it cannot be assumed that the all-metal monoplane has been proved to be a type peculiarly suitable for the general purposes either of the Air Force or of Air Transport undertakings.

Lord Apsley: Is it not a fact that the designer of the Wright Company was an Englishman and formerly employed in the Farnborough workshop?

Sir P. Sassoon: Yes, Sir, it is true that this gentleman who assisted the Wright Company in developing the air-cooled engine was an Englishman, and until 1919 was employed at Farnborough.

Aeroplane Accidents

MR. ROBINSON asked the dates on which the respective aeroplanes that have crashed this year and resulted in the loss of life of 27 members of the Royal Air Force were purchased; and whether he has any reason to believe that part of this sacrifice is due to the use of old and faulty machines?

Sir P. Sassoon: The average life of the aeroplane in question since the date of purchase, or of reconditioning, which is equivalent to complete rebuilding of the aircraft, is one year and seven months. The oldest of these aeroplanes was less than four years old. Only two out of 18 were of war time design. The answer to the second part of the question is in the negative.

THE ROYAL AIR FORCE MEMORIAL FUND

A MEETING of the executive committee of the fund was held at Idlesleigh House, on June 15, Lord Hugh Cecil in the chair.

The first business of the meeting was naturally a reference by the Chairman to the regretted death of the late Viscount Cowdray, who from the initiation of the fund in the autumn of 1919 had been senior trustee of the fund. A resolution of sympathy with Viscountess Cowdray was passed unanimously and was directed to be sent to Lady Cowdray, accompanied by a suitable letter from the Chairman.

In the place of Viscount Cowdray the committee unanimously approved the appointment as trustee of the Right Hon. Lord Revelstoke, P.C., G.C.V.O., who had signified his willingness to act in that capacity.

The secretary was able to inform the committee that the sale of a booklet recently issued, R.A.F. Songs and Verses, had realised so far something just under £30, and more orders were confidently expected.

The committee had before them and approved of certain posters which had been designed, with the intention of being distributed to the units of the Royal Air Force at home and abroad, with a view to spreading a knowledge of the fund and what it has done in the matter of granting relief and help of various kinds during the past six years, and appealing for continued assistance from the members of the Royal Air Force.

It was announced to the meeting that the Scottish National War Memorial, Edinburgh, would be opened by His Royal Highness the Prince of Wales, K.G., on the morning of July 14 next, and it will be remembered that the Royal Air Force Memorial Fund contributed a sum of £1,200 towards the erection of an R.A.F. Bay as part of the above memorial.

The committee requested Air Vice-Marshal F. R. Scarlett, C.B., a member of the executive committee, and who is attending the ceremony in an official capacity as representing the Royal Air Force, to be good enough, at the same time, to represent the executive committee at the ceremony.

The next meeting of the executive committee will take place at the offices of the fund on October 12 next, at 3 o'clock.

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PERSONALS

Married

FLIGHT-LIEUT. FRANCIS F. INGLIS, R.A.F., eldest son of the late Alfred Inglis and Mrs. Inglis, of The Hollies, Bickley, Kent, was married on June 18, at St. James's, Paddington, to VERA HELEN, daughter of Mr. and Mrs. Cecil W. Turner, of 49, Cleveland Square, W.

WILLIAM JOHN McDONOUGH, Reserve of Air Force Officers, was married on June 14, to WINIFRED MARY BULLOCK, only child of Mr. and Mrs. S. E. Bullock, of "Grasmere," Augusta Road, Moseley.

To be Married

The marriage arranged between Squadron-Leader L. J. MACLEAN, M.C. R.A.F., and Miss AGNES PATRICIA CAMERON, will take place at St. Adamnan's Church, Duror, Argyll, on Tuesday, July 5.

The engagement is announced between SHIRLEY MINIFIE-HAWKINS, late 3rd (Res.) Batt. Oxford and Bucks L.I., attached R.F.C., Chaplain to the Nautical College, Pangbourne, only surviving son of the late Joseph Minifie-Hawkins, of Cheslyn Hay, Staffordshire, and Mrs. Minifie-Hawkins, and BARBARA MARIE, elder daughter of Mr. and Mrs. Vivian Nickalls, of The High House, Newbury, Berks.

The engagement is announced, and the marriage will shortly take place, between FLIGHT-LIEUT. ROBERT LITTLE STEVENSON, M.B.E., R.A.F., second son of the late Lieut.-Col. John Stevenson, M.D., F.R.C.S., and Mrs. Stevenson, and MARY, daughter of Mr. and Mrs. George Paxton Vidler, of The Cottage, Bramshaw, New Forest.

Death

The death occurred on June 17, at a nursing home in London, very suddenly, of COLONEL JOHN D. FULLERTON, R.E., retired, aged 73, of 35, Stanhope Gardens, S.W.7.

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AIR MINISTRY NOTICES

Night Flying near Croydon

It is notified that within the area bounded by lines joining Epsom, Horley, Tonbridge, Wrotham, Dartford and Epsom, Royal Air Force aircraft will be flying every night, Saturday and Sunday excepted, during the period July 4 to August 13, 1927, inclusive.

As the aircraft will not exhibit their navigation lights after attaining a height of 5,000 ft., civil aircraft flying in this district after sunset should keep below this altitude.

No. 48 of 1927.

Night Flying in Thanet

It is notified that within the area bounded by lines joining Margate-Westgate-Herne Bay-Canterbury-Deal-Ramsgate-Margate, Royal Air Force aircraft will be flying every Monday, Tuesday, Thursday, and Friday night between the hours of 2230 and 0200, during the period June 20 to August 27, 1927, inclusive.

As the aircraft will not exhibit their navigation lights after attaining a height of 5,000 ft., all other aircraft flying in this area during the times stated should fly below this height.

No. 50 of 1927.

PUBLICATIONS RECEIVED

Aeronautical Research Committee Reports and Memoranda: No. 1044 (Ae. 231).—Full-Scale Pressure Plotting Experiments on Hull and Fins of H.M.A. R 33. By Lieut.-Col. Richmond, O.B.E. April, 1926. Price 1s. 9d. net. No. 1050.—Reports and Memoranda of the Aeronautical Research Committee published between January 1, 1925 and February 28, 1927. February, 1927. Price 4d. net. No. 1071 (Ae. 253).—Wind Tunnel Tests of Aerofoil R.A.F. 34. By H. Davies, B.A. October, 1926. Price 4d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

The Annals of the American Academy of Political and Social Science: Aviation. Edited by Frank A. Tichenor. Vol. CXXXI. No. 220. May, 1927. The American Academy of Political and Social Science, 3622-24. Locust Street, Philadelphia, U.S.A.

Bibliography of Aeronautics. 1924. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

Heat Treatment Bulletin No. 38. The Correct Hardening of Tool Steel. By A. R. Page. June, 1927. Automatic and Electric Furnaces, Ltd., 173-175, Farringdon Road, London, E.C.1.

The Conquest of the Air: An Historical Survey. By C. L. M. Brown, M.A. Oxford University Press. Amen House, Warwick Square, London, E.C.4. Price 2s. 6d. net.

Flying for Air Survey Photography, 1926. By F. Tymms, M.C., and Flight-Lieut. C. Porri, R.A.F. Air Ministry, H.M. Stationery Office, Kingsway, London, W.C.2. Price 2s. net.

Modern Ignition. By H. H. U. Cross. *Lockwood's Manuals*. Crosby Lockwood and Son, Ltd., 7, Stationers' Hall Court, E.C. Price 4s. net.

Magneto Manual. By H. R. Langman. *Lockwood's Manuals*. Crosby Lockwood and Son, Ltd., 7, Stationers' Hall Court, E.C. Price 7s. 6d. net.

Flugzeug-Navigation und Luftverkehr. By Hermann Röder. Verlag Otto Herm, Hörisch, Rähnitzgasse 18, Dresden, N.6. Germany. Price Rm. 12.

Monthly Journal of the British Empire Chamber of Commerce in the United States of America. May, 1927. Vol. VII., No. 5. British Empire Chamber of Commerce in the United States of America, 25, Broadway, New York, N.Y.

The Air Pilot Monthly Supplement. No. 32. June, 1927. The Air Ministry, Kingsway, London, W.C.2.

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Catalogues

Morris Gears for Lifting and Shifting. Herbert Morris, Ltd., Loughborough.

Constable Books, Summer, 1927. Constable and Co., Ltd., 10-12, Orange Street, London, W.C.2.

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AERONAUTICAL PATENT SPECIFICATION

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1926

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7,171. G. F. BRUT. Exhaust devices for aeroplane i.c. engines. (249,518.)

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